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THE FUNDAMENTAL PRINCIPLES OF PEDIATRICS *

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Pediatrics, at present, may be divided into two parts; first, that relating to the treatment of disease and perversion of function; second, that concerned with the production of well-developed physique in children. More attention is usually paid to the first than to the second of these branches.

If its scope were broadened, pediatrics might be defined as that branch of science which concerns itself with the animal aspect of the production of human beings. This science could then be divided into two parts; first, that devoted to the production of the highest development of the human being as an animal; second, that concerned with the management of the growing human animal when malformed, or with perverted functions, or subjected to mechanical injury, or attacked by parasitic microorganisms, or poisoned. It is evident then, that the pediatrist should be versed in general biology, bacteriology, protozoology, chemistry and physics.

While the public is not yet fully educated to the advantages of consulting a pediatrist before children are sick, it would be to the advantage of children, of parents, and of the community at large if every child during its most active period of growth were supervised by a well-equipped pediatrist, meaning by this, one who has had a broad training in general science as well as in a special department of medicine. If a physician undertakes to look after the development of a child, he should thoroughly understand the broad principles of human development and of animal life in general; it is not enough simply to be able to follow the ideas of some prominent teacher or authority.

It would prove an advantage to all physicians if the fundamental principles of the management of infants could be firmly established and thus taken out of the field of discussion. In order to attain this result, it is essential that the teachings concerning the chemistry of feeding be in accord with the general science of chemistry, that the problems of infancy falling in the province of physics be recognized as such, and that the teachings concerning animal life and development be true to those principles which have been found to apply to life in all its forms.

While medical men stand well in the forefront when it comes to the relations of human beings and animals to bacteria and protozoa, it must be confessed that they often lag behind in respect to the general care, nutrition and development of the human being in relation to his environment. The physician may broaden out to advantage at the points where science at large touches these problems.

The life-cycle of human beings, like that of all forms of animal life, may be sharply divided into two periods: first, that in which all of the food is derived from the mother's body in specialized forms; second, that in which none of the food is obtained from the mother's body but a wide variety of forms is taken. It is during the period in which the mother secretes the specialized forms of food that the tissues are produced and become differentiated into organs. When the organs of nutrition are developed, such forms of food are no longer needed and the infant has become a living machine that is able from food to build the future adult. This living machine is operated on much the same principle as a mechanical engine. It takes in fats, sugars and starches, and, by combining them with air procured through the lungs, obtains a supply of energy. This energy, when expended, appears in the form of heat which must be removed as fast as it is liberated, and it is accordingly found that all animals are provided with two cooling systems. For ordinary conditions, radiation of heat into the surrounding air is sufficient, but when the temperature of the air is nearly as high as that of the body, or higher, radiation fails to cool sufficiently, and heat is removed by being changed into latent heat through the evaporation of perspiration.

An infant taking 36 ounces of breast milk daily receives food yielding about 792 calories, or enough heat to raise the temperature of a 14-pound baby 113 C. In other words, this food will liberate enough heat to raise the temperature of the infant above the boiling-point of water. It may easily be appreciated, then, how important is the proper working of the infant's cooling system; yet how few realize that infants and all animals have cooling systems, and that the life habits of many animals are largely controlled by them! Some animals of enormous strength, such as the lion and cat tribe, are incapable of prolonged effort because they cannot get rid of the heat liberated as fast as it is produced.

A large part of the sickness among infants in hot weather may be due to ineffective cooling of the living animal motor. Imagine an infant on a hot day lying in a crib surrounded by curtains. Air movement is stopped, and the atmosphere around the infant becomes so saturated with water vapor from the evaporated perspiration that no more can evaporate, with the result that the infant's cooling system breaks down and vomiting and diarrhea may ensue. Boiling water, and vapor from it, have the same temperature, 212 F., yet the vapor has absorbed almost one thousand degrees of heat and rendered it latent or insensible. As long as the air is not

* President's Address before the American Pediatric Society at Mohonk Lake, N. Y., May 31, 1911.

saturated with vapor, or is nearly saturated, but in motion, this change from sensible to insensible heat takes place and it is perfectly feasible to be cool and comfortable in air whose temperature is above 100 F., provided this air is dry or in motion and thus capable of vaporizing perspiration. In fact, one can be kept quite cool by a current of hot dry air if a wet cloth is kept next to the skin.

When an infant has been subjected to conditions such as render it unable to liberate its heat properly, the treatment that has proved most successful is to stop all food temporarily, thereby reducing heat production; to give the infant baths to remove heat; to keep it quiet to prevent the expenditure of energy which liberates heat; and to send it to the country where the air is cool or dry or in motion; then, unless there is very acute poisoning, recovery usually takes place.

No doubt bacteria play a large part in the summer sickness of infants, but as they are present in food at all seasons, it is evident that the heat gives them an advantage over the infant which they do not possess in cooler weather, or when conditions are favorable for the infant to rid itself of the heat. Restoring the infant to normal action causes the bacteria to lose their effect.

In hot weather food cannot be needed for its caloric or heating effect; it is required rather for its energy content, and the teaching should be in accordance with this fact. Feeding for energy is, to a large extent, a branch of physics; in the management of summer cases a knowledge of the principles of physics would thus often be of greater value than acquaintance with many of the drugs so often employed. The protein and mineral matter are for building materials and repair, and chemical composition is here the controlling factor, as far as potential value is concerned. It is, however, entirely out of place to value protein by its energy or caloric contents. What would be thought of an architect who determined the suitability of timber for a building by the amount of heat it would produce if burned? The feeding of energy and of building materials must be done with a distinct idea of the purposes they are to serve.

The emphasis on the necessity of plenty of fresh air should not be looked on as a hobby. The animal motor operates by a combination of oxygen in the air and the fats and carbohydrates of the food, and one is useless without the other. Insufficient air means incomplete combustion, and the products of incomplete combustion clog up the animal motor. Air is thus as essential as food.

In managing the nutrition of the infant much can be learned from general biology. In all forms of animal life the mother supplies specialized forms of food to the young until their digestive organs are developed, and no method of feeding that ignores this fact can be of the highest value. Many years ago I called attention to the fact that the protein of all milks has a developmental as well as a nutritive function. An artificial food for infants should contain the building elements and energy foods in about the same quantities as those in mother's milk if the best development is to result. Attention should likewise be paid to see that the food behaves in the stomach like mother's milk, but it will not do to compare foods by their chemical analyses alone, as it has long been known that two foods of the same chemical composition might not be interchangeable in nutritive value, and there are factors involved in feeding that chemical analysis cannot explain. The reason for this may be found in some of the later work in chemistry, as exemplified in the following illustrations: It is a curious fact that two clays, having the same chemical composition, may have entirely different physical properties, and that clay near the mouth of a river will have different properties from the same substance further up the stream, the two clays being derived from the same parent rock and having similar compositions. Acheson reasoned that this difference might be due to the fact that the clay down stream had come into contact with washings from organic matter, and by adding vegetable infusions to the upstream clay he was able to increase its plasticity and make it act like the clay down stream. Here is a practical illustration of what profound changes the most insignificant additions to a substance may produce. Bodies that are insoluble in water may be rendered soluble if certain foreign substances are present in the most minute quantities. Duncan gives the following illustration:

> The mere presence of a trace of a foreign body may make an insoluble body soluble. The following puzzling fact is known to but few: chromic chlorid is a curious substance that exists in two forms, soluble and insoluble. The insoluble violet crystals may be left under water for days unaffected . . . but drop into the test-tube a trace of chromous chlorid, even 0.000025 of a gram, and the violet crystals hasten to bury themselves in the water; the temperature rises and the indigo-blue liquid results. This is an example of what is called physical catalysis, for the chemical properties of the chromic chlorid are the same after as before; it has simply passed into solution. Turning now to chemical catalysis, we are confused by the number of examples, for, owing to the recent ferment of investigation, it would take a dictionary to chronicle them.

Remarkable results have been obtained in industrial chemistry by the use of such catalysts. Substances which have been obtained indirectly by the aid of plants can now be made artificially. Heretofore, when the necessary ingredients to form desired substances were brought together, they would not combine. There was something in the plants, however, that would cause such combinations to take place. Indigo has been obtained from the indigo plant, but it was found that the mere presence of a trace of copper or mercury would make the ingredients combine in the laboratory, and now it is made artificially. Platinum black is used to cause the ingredients of formaldehyd to combine, and other substances will cause metallic gold, silver, platinum and graphite to go into aqueous solution called colloidal solution.

How many factors in feeding may be influenced by such apparent trifles remain to be discovered, but that numbers of the vital processes are thus controlled is beyond doubt. Hunt makes the following statement:

> Diet has a marked effect on the resistance of animals to certain poisons; the resistance of some animals may be increased forty-fold by changes in diet. Certain diets, notably dextrose, oatmeal, liver, and kidney, greatly increase the resistance of mice to acetonitrile; their effect is similar in this respect to the administration of thyroid; the effect of an oatmeal diet in increasing the resistance of certain animals to acetonitrile is probably due, in part, to a specific effect of the diet on the thyroid gland; this is an illustration of how an internal secretion may be modified in a definite manner by diet. . . . The experiments show that foods such as enter largely into the daily diet of man have most pronounced effects on the resistance of animals to several poisons; they produce changes in metabolism which are not readily detectable by methods ordinarily used in metabolism studies. The ease and rapidity with which certain changes in function

are caused by diet are in striking contrast with the essentially negative results obtained by the chemical analyses of animals fed on different diets.

According to Alexander:

Bald chemical analyses cannot express the digestibility and availability of a food any more than it can express or explain the action of the digestive juices or, in fact, any other physiologic process. In all these processes can be traced the influence of the colloidal substances, present in the body, whose effects are quite out of proportion to their small mass. As soon as we approach the chemistry of the living organism, we are confronted with problems of colloid chemistry, and there is no doubt but that a correct understanding and application of its principles will throw much light on many other obscure problems in biology, physiology and medicine.

These foreign bodies, whose mere presence causes such profound changes, are called catalysts and a peculiar property which they possess is that, at times, they lose their efficiency. When this occurs, they are said to be poisoned. After a time they may recover their power to produce the changes they formerly caused.

The question as to what this has to do with the practical management of infants may here be raised. McCullom conducted some experiments to see how simple in form the food elements could remain and still be combined in the animal body, it long having been believed that animals could not live for any length of time and develop on the pure food elements. Pure fat, sugar, starch, ash-free protein and the ash of milk were used, filter-paper being employed to give bulk. For a time there was gain, then a standstill and finally a loss. By adding successively such flavoring agents as cinnamon, celery, vanilla, caramelized sugar, distillate from strong cheese and salt, it was found that the loss could be prevented. Leaving the fat out of the food temporarily or changing its form, or altering the sugar content of the food, was found to improve the utilization of the food. "In one instance toward the end of the experiment, bacon fat, freshly rendered and filtered through paper, induced hearty consumption when every other means failed." His conclusions were as follows:

Without palatability the ration may possess all the necessary food ingredients and yet fail to nourish an animal properly. The failure of previous efforts to maintain animals on a mixture of relatively pure, proximate constituents of our foodstuffs was due to lack of palatability of such mixtures. When sufficient care is given to changing the character and flavor of the food supplied in such simple mixtures, it is possible to induce an appreciable amount of growth.

Here is an illustration of the action of catalysts in practical feeding. One worked well until it became poisoned or lost its efficiency. A change in the form or flavor of the food brought another catalyst into action, and it in turn lost its efficacy. The beneficial effect of variety of diet has long been known, but the scientific basis on which it rested has not been suspected hitherto. We often get the same good effect by changing the flavor of the infant's food or by altering the form of the food elements, especially the carbohydrates.

Such facts as these could never have been explained by practical infant-feeding, or rather, the principles could not have been evolved; and this shows the advantage of being familiar with general science and applying principles worked out elsewhere to the management of infants.

That a profound change in the function of the human digestive organs may be brought about by changing the character of the food has been shown by Yakawa, who fed young men who had been vegetarians all their lives a diet composed largely of beef, milk, eggs and rice. The fats, and particularly the protein, were not well assimilated. There was loss of appetite, lassitude and constipation. Such a result is at variance with the belief held generally that animal protein is better digested than vegetable protein. But this case is an illustration of the biologic principle that all living things tend to adapt themselves to their food and environment. Those who have been trained to digest animal protein develop digestive organs well fitted for this purpose and digest it better than they do vegetable protein, and vice versa.

It has been said that one principle is worth many facts, for it covers them all. If the few main principles in pediatrics could be grasped, a large number of facts might be forgotten to advantage. Pediatrics cannot take the position it deserves, until those who practice it recognize that their work is to help infants adapt themselves to their food and environment, and this calls for at least an elementary knowledge of general biology, bacteriology, protozoology, chemistry and physics. We must broaden our scientific outlook.

Medicine has always advanced more rapidly as an art than as a science, partly because it has not been sufficiently rooted in the principles and methods of general science. The extreme growth and differentiation of specialism has here acted both as cause and effect. Ingenious and successful technic, rather than the more laborious and widely applicable study of underlying principles, has often satisfied. The specialties themselves have been accepted without much appreciation of their relative values. Those of fundamental importance are grouped with others having only local forms that minister to comfort and utility, but not often directly to life itself. It is thus right to make a distinction between a major and a minor specialty. Of the former, pediatrics should take the highest place, as it deals with the first and formative period of life, and consequently renders the most lasting service to the race. It is time that a new account of stock be taken of the various branches of medicine and that they be lined up with a truer perspective as to relative importance. Thus will the dignity and importance of pediatrics be made clear to the profession and the public. It offers to-day the most promising field for advanced work in scientific and experimental medicine. Fully to occupy this field, its followers must apply the general and broad methods of science at large to the solution of its problems.

One of the deepest sayings of Sir Francis Bacon was: "The end of philosophy is the intuition of unity." Let us apply this broad truth to science. The end and object of all science is the recognition of unity.

Primitive Man and Disinfection.—Man has an instinctive repugnance to all noxious odors, and from the earliest time has sought to mask their presence by the use of aromatic substances, says Dreyfus (*Jour. Am. Pub. Health Assn.*). The use of perfumes is probably a relic of the effort of primitive man to counteract this evil. Many religious ceremonies, such as the burning of incense, have also the same origin, and embalming as practiced by the Egyptians is a good example of successful attempts to arrest putrefaction in very early ages. Sulphur has been employed from the earliest times, and Homer describes its use in religious ceremonies. In the time of Hippocrates, sulphur was regarded as an antidote against the plague. Ovid makes mention of the fact that sulphur was employed by the shepherds of his time for bleaching fleeces and for purifying their wool from contagious diseases. During the plague of Athens, Acron, according to Plutarch, stayed the spread of the epidemic by lighting fires in the middle of the public places and in the streets where deaths had occurred; and the lighting of fires during times of plague has been customary until quite recent times.

NEW MECHANICAL DEVICES FOR CLOSING WOUNDS *

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Comparing the work in various clinics, it is found that some men suture wounds rapidly. Most men require a large percentage of the total time for final closure, and nearly all take longer for this step than they themselves realize or would believe unless they have been timed by the watch.

In a series of observations made for me on my own work and that of other surgeons, the time was found to be so unevenly divided that the internal operative work often was briefer than the elaborate wound closure. Thus the neat and rapid interior work was robbed of its chief value to the patient by prolonging the total operation and anesthesia.

Methods for hastening wound closure may be good or bad in proportion to their safety and nicety of adjustment, but they must not involve any sacrifice of the improved modern principles of anatomical restoration of layers whether in the extremities or the trunk.

On the other hand, if with equal security and asepsis wounds may be brought together in a briefer time or with more smoothness and less trauma, a new factor of safety will be added tending to the welfare of the patient.

Thus the use of Michel skin clips will shorten the time of a herniotomy or an appendectomy about five minutes. In spite of the fact that a few men can do the whole operation in that time, more men take fifteen minutes or longer, and some excellent operators would be surprised to be told that they take ten to twenty minutes by the watch for their careful wound closure. This is admirable from an anatomical standpoint. It is characteristic of some very conscientious workers and gives beautiful healing, but it is wrong to ignore the injurious effect of prolonging anesthesia even in simple cases.

On the other hand, in the very swiftest closure I have seen, as in the abdominal wall in laparotomies done with spectacular swiftness, I have been led to suspect that the suture work on the layers may have been slighted to gain speed. This may be unjust, since most of the very rapid work is done by men of enormous experience, but it is an inherent fault of hand suturing that it must be somewhat slow or else somewhat imperfect. Long practice with the needle gives speed, but only up to a certain point. To get beyond this point we must adopt new devices.

Fig. 1.—First position. Ready to insert stitch. On closing handle needle passes flaps and is seized automatically by opposite blade carrying thread through tissue. On pressing catch A needle is released at B and returns to C, ready for next stitch.

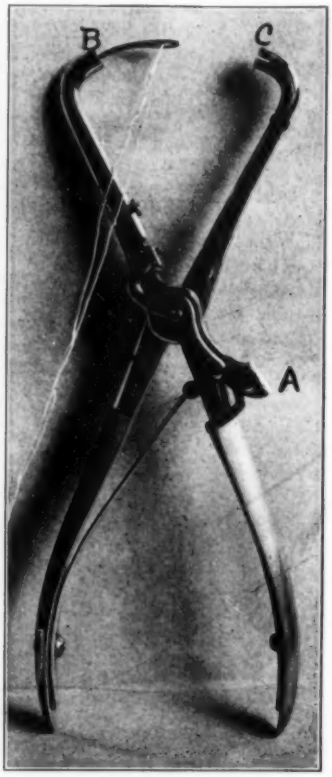

Fig. 2.—Second position. Needle seized antomatically by its point at B and pulled through tissue by closing and opening handle. On pressing thumb catch A needle returns to first position, C.

Reminding you again of the skin clips—five or six of them will close a three or four-inch opening in a quarter or half a minute. If we could only use them for all the layers, sixty seconds would be ample for a deliberate layer-by-layer closure of the abdominal wall. To make this possible, I have devised clips of absorbable metal for buried suture and for suturing blood-vessels, as described later in this paper. Before alluding to this, I wish to call attention to the possibility of sewing wounds by a machine.

For a number of years I have tried to perfect a sewing machine for wounds constructed with platen, fixed needle and bobbin or shuttle. In spite of the fact that several small hand and toy machines are made small enough to handle easily, none of them seems capable of being brought into cavities or depths of wounds or can be easily sterilized. These machines place only mattress stitches, whether one or two threads are used. They could not easily be adapted to overhand glover or interrupted stitching. After considerable discussion and study of the problem with the manufacturers of various machines, I became satisfied that we could never design a shuttle machine that would be anything but clumsy, heavy and inefficient, and therefore, dangerous about a wound.

It is different with forceps. With them we are familiar and know that we can place them in all sorts of deep and superficial locations even more readily than the hands or fingers. If forceps could be made automatically to insert stitches carrying threads by merely opening and closing their blades, we should combine some of the speed and accuracy of machine-sewing and the nicety and safety of hand-sewing.

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

After some years of experimenting and disappointment, I have turned to forceps and needle as a *sine qua non* for surgical work, and have constructed several forms of forceps which will actually sew the skin and deep layers more smoothly and rapidly than by hand. Of course they are equally adapted for placing deep ligatures, single or multiple.

The object of these instruments is to gain speed, and, incidentally, regularity of spacing and of tension in the approximated edges. We must admit that this is as likely to be a drawback as an advantage. No machine can have the delicacy and tactile sense of the human fingers; but how much time can we afford to sacrifice for careful suturing by the fingers? Certainly in fine closure like the Lembert stitch in the hollow viscera it is invaluable. In external work, in which the fingers are little used, but mostly needle forceps, a machine sewed wound may well be neater and more delicately adjusted than one sewn by hand in equal time.

Classes of stitches better placed by machine than by the fingers or needle forceps are:

1. "Deep "suture ligatures," single or multiple, around vascular pedicles, as the mesentery meso-appendix, broad ligament, hernial sac, etc. In the depths of a wound or cavity with the sewing forceps one does not have to see the needle point. The forceps automatically and infallibly grasps it and draws it through. It is a particularly rapid method of cross-suturing a wide pedicle of any sort.
2. Straight lines of suture, in which accuracy of spacing, rather than accuracy of fitting, is desirable. Such wounds are abdominal incisions, both muscle-splitting and in the middle line. These are rarely closed now by single rows of deep stitches, but almost universally by anatomical restoration of the concentric layers from within outward. The suturing machine does this with a speed and accuracy far greater than the hand or needle-holder.

NEW FORMS AND NEW APPLICATIONS OF METAL CLIPS

The clips ("agraffes") used by Michel for the closure of the skin in mastoid and other operations interested me from the first. They seem to mark a new departure in methods of wound closure, and to open possibilities in several new directions.

When they were offered to the profession, I began to use them somewhat experimentally and with misgivings. Unlike most new appliances (especially mechanical devices) they proved a much more valuable device than even the inventor had claimed. From using them in a limited class of incisions, I learned to put them on almost every operative incision, either alone or in combination with some deeper stitches. I have, therefore, used many thousand of them in lieu of needle and thread closure for the skin. Experience with this method of approximation has resulted in an increasing appreciation of their value on the part of my patients, my assistants and myself.

It is true that my earliest experience was only with mastoid operations, but I learned almost accidentally that they were so neat, quick and painless in practical use, that they almost superseded other methods of skin closure in my work. I find that a number of American and European operators have made the same discovery, no doubt independently. While in some clinics they are not seen at all, a number of well-known clinics (as that of von Eiselsberg) employ them almost as a routine.

The advantages noted for the clips in our clinic have been:

1. Speed of application.
2. Asepsis.
3. Rapid healing.
4. Absence of pain.
5. Absence of scars.
6. Ridge-shaped or folded-up suture line.
7. No perforation of skin.

The only disadvantages I can imagine are:

1. Lack of strength.
2. Want of flexibility, causing pressure, irritation or ulceration.

These advantages and disadvantages may be considered in detail:

1. *Speed.* — Observations taken by my assistants showed from five to twenty minutes by various operators in closing ordinary operative incisions. In some instances this was as much as one-third or one-half of the time of operation. Several operators had methods of great nicety in skin-closure, but probably were not aware of the added time taken. The average time of closing (the skin only) by Michel's clips was fifty seconds for short incisions, such as hernia and appendix wounds.

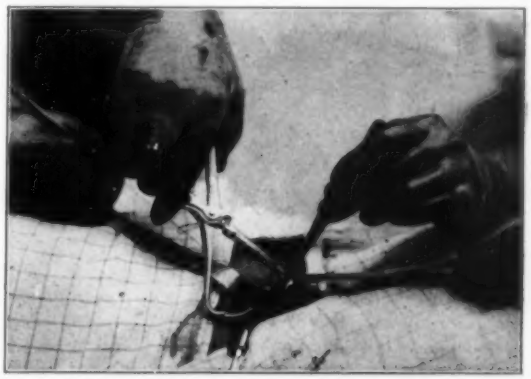

Fig. 3.—Closing abdominal wound (peritoneal layer).

Fig. 4.—Closing abdominal wound (internal oblique layer).

2. *Asepsis.*—The occasional stitch abscesses due to buried catgut, to silkworm, silk, linen or horsehair, point to the fact that all methods which penetrate the ducts and follicles of the skin are subject to infection. This risk, it is true, is slight and is much minimized by our best modern technic, but is not wholly absent, because the deep layers of the skin are now known to be beyond the reach of our sterilizing agents, even of iodin. It is probable that our so-called aseptic wounds are examples rather of relatively light infections overcome by the tissues.

The clips, on the other hand, do not pass through the skin. Even should sepsis exist under their points, it finds no line of access as in the case of tissue traversed by a needle and thread. No method can be conceived more certain to vaccinate the deep layers with matter from the skin follicles than the puncture of a needle and the subsequent wiping of the tissues from without inward by the tight-fitting thread. It may be that the use of a double-needled thread, both needles being passed from without inward, would lessen this risk. As we always insert the figure-of-eight skin-fascia suture with two needles, this may explain a certain immunity we have had with it.

3. *Rapid Healing.*—The clips are removed early. Alternate ones in three days and the remainder in five days.

Fig. 5.—Closing abdominal wound (external oblique layer).

Fig. 6.—Closing abdominal wound (external oblique layer—finished suture).

4. *Absence of Pain.*—This is very noticeable. In goiter cases, hernia, laparotomies, etc., patients uniformly complain less than with sutures. The splint-like action and the absence of punctured wounds explains this. Without exception assistants and dressers report easy convalescence in these wounds.

5. *Absence of Scars.*—Early removal leaves no permanent marks. The clips, if left on too long, will, however, leave punctate scars like deep stitches.

6. *Ridge-Shaped or Fold-up Suture Line.*—This is a mechanical property of the clips and insures deep approximation, almost like that of two rows of stitches.

We turn now to the possible disadvantages above noticed.

1. *Lack of Strength.*—This may be a real limitation, but a desirable one, rather than an obstacle to the use of clips. They certainly lack strength in wounds under great tension, as in certain extensive breast amputations, in which approximation is difficult. They hold the skin and fat only, not the deeper fascia, but even with these obvious limitations they may well be combined with deep or buried retention sutures of any form. I sometimes have made the statement that the inability to hold skin under great tension was a virtue if it led us to avoid dangerous traction by suitable devices.

2. *Want of Flexibility.*—Metal clips are not flexible after once being applied, and hold the pinched-up skin rigidly. This will cause ulceration about as soon as a deep tense silk silkworm or wire stitch will; that is, in from eight to twenty days, but when clips are removed in five days, ulceration is never seen. No case of sloughing from pressure ever occurred in my use of them. I have always observed that a semi-rigid suture will cut less than a soft one. The splint action of a wire or silkworm gut is quite valuable, and this is one of the merits of metal clips.

In using Michel's clips I soon found great variations in the density and thickness of the skin of different

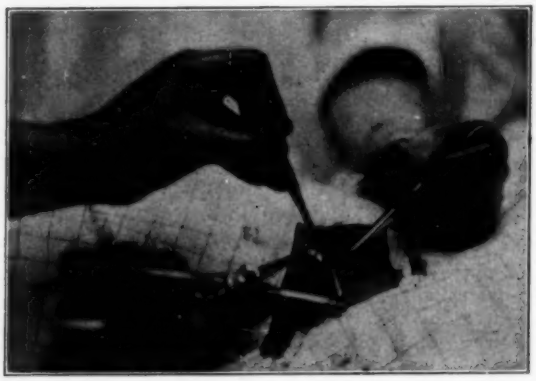

Fig. 7.—Closing abdominal wound (skin suture). One thread and needle used for the four stitch lines without knotting between.

parts of the body, which I had never noticed in using stitches. The skin of the epigastric region is at least twice as dense and thick as that of the appendix and hernia region. The imported clips are of just the right length to grasp the skin of the groin, neck, or that of the limbs, but not strong enough or long enough to hold well that of the epigastrium or hairy scalp; therefore, I have had made longer ones for these locations and smaller ones which I sometimes use for fine skin edges. I also found that in some cases quicker and more accurate application could be made by holding the larger clamps between the thumb and forefinger instead of with the Michel forceps.

Figures 8 to 11 show forms of thumb-clips which give quite as smooth and nice a cuticular junction as the Michel clip and are considerably stronger. One of the crescentic clips does the work of two of the smaller kind, so that a couple of them will close an ordinary 4 to 6 cm. incision; i. e., one requiring four small clips. It will be noted that the skin junction is held at twice as many points as the deep part, so that the line is ridge-shaped and held as if by a few deep and superficial stay stitches.

CLIPS USED IN HOLLOW VISCERA

The new feature which I wish to bring before you is the use of clips in intestinal work. In all locations permitting them to drop off into the alimentary canal they are safe and speedy of application. This precludes their use except in the inner suture of an anastomosis. They can be used on the mucous side, but not for the peritoneal, nor in place of the Lembert suture. These limitations do not prevent them from being of considerable utility in various ways about the intestine.

CLIPS USED FOR HEMOSTASIS

Finally, I must add that as a substitute for artery forceps and ligatures, I find the small clips of great value. Their action is clamp-like and they check oozing promptly, either interstitial or from large branches. I have found this of great value in the abdomen, throat and brain, as it does away with numerous dangling forceps. The objection to leaving small staple-like foreign bodies in wounds and cavities is slight in comparison with their advantages. No objection at all exists in

Fig. 8.—Author's wide clips, after type of Michel clip or "agraffes."

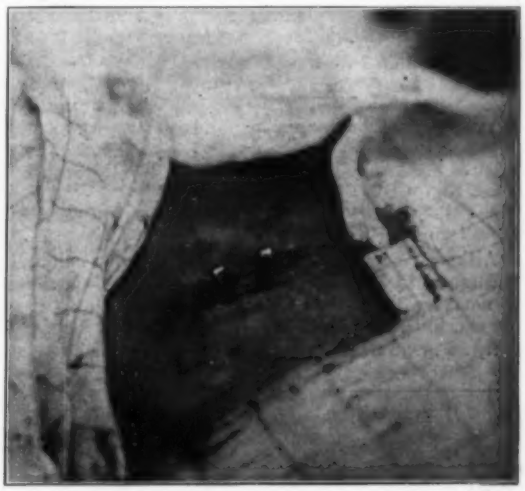

Fig. 10.—Author's horseshoe clip. One drawback to this form is a tendency to slip or ride too high from edge of wound.

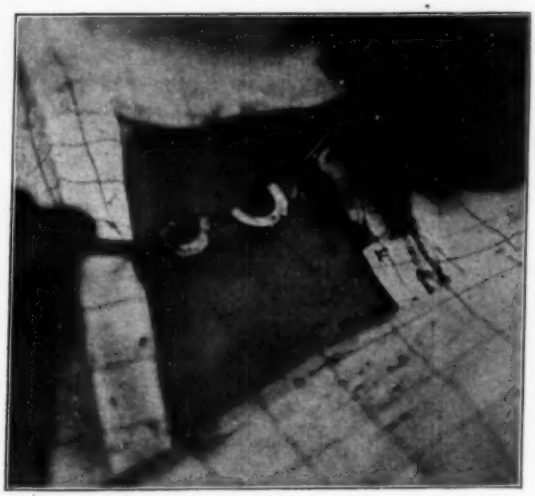

Fig. 9.—Author's horseshoe or double clips. Can be applied by thumb and forefinger or by forceps.

Fig. 11.—Author's double square clip. Has fine teeth, 1 mm. long, at tips to bite into cuticle.

When an open gastric or intestinal approximation is made, the inner or deep suture is usually of strong silk or linen.

In doing such work I often put a clip on each end to mark out the inner or deep stitch-line. This seems to render the rest of the suture work easy and quick.

In the illustrations such use of the clips may be observed.

cavities like the intestine, rectum, or vagina, where, as in hysterectomy, they are far easier of application than forceps or ligatures.

The metal used for outside work is German silver. Copper, brass and block-tin do not, in my work, give the right degree of softness combined with firmness after bending. They must have no elastic tendency to spring open after clamping into place.

To secure absorption of the little metal staples after placing deep in wounds, I tried aluminum, zinc and magnesium. The latter is ideal in being quickly absorbed, but is so brittie that it breaks instead of "clinching" or crimping together when clips and staples are made of it. I am now using an alloy of these metals, which is tougher and promises well for rapid absorption.

I shall report on this material when I have had a longer series of operations under its use. With a good absorbable metal clip the deeper layers of a wound can be closed and buried, giving all the speed of external clip closure and supplanting the thread and needle at all stages.

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GONORRHEAL OSTEOPERIOSTITIS OF THE LONG BONES *

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Although gonorrheal osteoperiostitis of the epiphyses, and especially of the small bones of the hands and feet, is not very uncommon, this is far from being true of osteoperiostitis of the diaphyses of the long bones; in fact, no mention is made of this condition in the usual

Fig. 1.—Definite deposits of new bone about femur, seventeen days after operation.

text-books and systems of surgery, and its existence has even been disputed. In the following case, which I shall describe in some detail, the femoral diaphysis was very extensively involved.

Patient.—J. M., aged 24, was admitted to the Johns Hopkins Hospital, January 2, 1907, complaining of an abscess on the left thigh.

History.—The family history and previous personal history were unimportant. There was no history of gonorrhea before present attack. The present illness began two weeks ago with swelling in the left thigh, which became painful, hot and hard. There was no history of injury. On account of inability to use the leg, the patient remained in bed for a week previous to admission. His appetite was lost, bowels became constipated and he had night sweats. He did not know that he had any fever. He dated the illness from a gonorrheal infection of four weeks' duration, the discharge continuing until one week before examination. A bubo developed on the left side but disappeared without discharging.

Examination.—Patient was a healthy-looking boy, in good general condition. Temperature was 103.6 F., pulse good volume and tension, 90 to the minute. Leukocytes 12,400. Examination of heart, lungs and abdomen negative. The patient had an acute urethritis up to one week before examination when the discharge ceased; he had a purulent balanitis, gonococci being found in pus about the glans penis. The glands of the groin were slightly enlarged, not tender. Prostate rather tender. Over the anterior and outer aspects of the middle third of the left femur there was a tender indurated area 10 by 14 cm. in diameter, apparently an abscess beneath the quadriceps muscles. The surface temperature was elevated but the skin was not reddened. The hip and knee seemed to be in nowise involved.

Fig. 2.—Thick envelope of new bone about femur, thirty-seven days after operation.

Operation.—Jan. 2, 1907, an incision 14 cm. in length was made over the swelling on the anterior and outer aspect of the thigh. The muscles were separated and the swelling found to be due to a small collection of fluid beneath the periosteum, the fluid being turbid but not actually purulent. A pure culture of the gonococcus was grown from this fluid by Dr. Rufus Cole, now of the Rockefeller Hospital, New York. The periosteum was very thick, edematous and lined by a velvety granulation tissue. It had been stripped away from the bone over a considerable area by the collection of fluid beneath it. The exposed bone was slightly roughened by deposits of new bone. The marrow cavity was not opened. The wound was irrigated with mercury bichlorid and packed with iodoform gauze.

Pathologic Examination.—Sections of the thickened periosteum were examined by Dr. W. G. MacCallum, who made the following note: "The section shows some new-formed bone embedded in a great deal of very vascular granulation tissue. Outside of this there is muscle, the individual fibers of which are separated by the same vascular granulation tissue. The interstices of this tissue contain much fibrin, and there are very abundant wandering cells which are as a rule not polymorphonuclear leukocytes, but mononuclear cells of various

Fig. 3.—Great thickening of femur, eight months after operation.

sorts, many of them with long branching protoplasmic bodies. The new bone is in the form of anastomosing laminæ, only partly calcified and thickly surrounded by osteoblasts. About these masses, and in the meshes, there is a vascular granulation tissue filled with cells indistinguishable from the osteoblasts and in places continuous with them, otherwise the tissue resembles that seen in any other granulation formation.

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

No definite organisms can be seen in the specimen stained with methylene blue."

Course.—Jan. 19, 1907: General condition of patient is not very satisfactory. He looks rather pale. Temperature ranges between normal and 102. Pulse is of small volume, rather low tension, ranging around 100 to the minute. The heart sounds are clear. The wound was dressed to-day. There was a small amount of purulent discharge. The whole left thigh is considerably swollen and there seems to be a distinct thickening of the femur, beginning a short distance below the greater trochanter and extending almost to the condyles. The whole extent seems somewhat tender but the most tender points are on the outer side of leg, 6 to 8 cm. below the upper border of the trochanter and on the inner side, a short distance above the knee. Movements of hip and knee are free and painless. A skiagraph (Fig. 1) was taken and this shows definite deposits of new bone about the femur.

Jan. 27, 1907: Condition of patient is much improved. He eats well and sleeps much better than formerly. For the last few days he has complained of no pain. Temperature seems to be subsiding gradually. The highest point in last three preceding days was 100.6 at 8 p. m. yesterday. The wound was dressed to-day. There was a small amount of purulent discharge. The wound cavity still extends 10 to 12 cm. along the bone, which is exposed throughout this extent. The thigh is less swollen but the bone seems thicker than ever. Tenderness has all disappeared. Movements of hip and knee are perfectly free and painless.

Feb. 10, 1907: Patient is now feeling very well and wants to walk. Temperature is about normal. Wound is clean, granulating well. There is still a considerable area of exposed bone in the bottom of the wound. Movements of hip and knee are perfect and painless. There is a marked thickening of the femur. Skiagraph taken a few days ago (Fig. 2) shows a thick envelope of new bone about the shaft of the femur, extending from a short distance below the trochanter, almost to the condyles. No pain or tenderness is anywhere present. On palpation the femur seems to be about 9 cm. in diameter. Circumference of left thigh at its middle is 37 cm., right thigh 32 cm.

Feb. 20, 1907: Patient has been walking for several days. The leg has given him no pain. Temperature has not been elevated. The left femur is still greatly thickened. The wound is entirely healed. The patient is discharged from hospital.

He was seen again on Aug. 31, 1907, when his general condition was found to be good. Examination of the leg, however, revealed a great thickening of the femur. There was still a small sinus near the middle of the old scar. *X*-ray was taken (Fig. 3) and showed an enormous thickening of the entire femur.

After this the patient was lost sight of and has not been seen since. It would be interesting to know whether there was any infection of the marrow cavity, and if so, whether it was sufficient to so impair the blood-supply of the cortex as to cause sequestration. I am inclined to believe that there has been no sequestration of the femur in this case.

According to Hirtz,[1] Fournier, in his remarkable study appearing in 1869, first established definitely the clinical existence of periosteal manifestations of gonorrhea. He distinguished periostitis and periostosis, the former being simple inflammatory deposits in the periosteum, the latter being tumors resulting from infiltrations between the bone and periosteum. He insisted on the much greater frequency of periostitis, which produces slight circumscribed, ephemeral swellings, most frequently found on the tibia just above the insertion of the sartorius, on the lower extremity of the humerus, on the upper end of the fibula, on the greater trochanter of the femur, on the posterior surface of the os magnum and on the extremities of the metacarpal and metatarsal bones. The only symptoms are a more or less acute pain in a circumscribed area with perhaps a little edema and redness of the overlying skin. Liable to recurrence at each reinfection, they can at times proceed to the chronic stage and produce a periostosis, which is flat, fixed, hard and adherent to the bone, usually small in extent, but capable of a considerable development.

Fournier and most other authors who, following him, have studied the subject, have emphasized the purely periosteal origin of the lesion, its epiphyseal location and its frequent association with the deforming variety of gonorrheal arthritis.

Achard and Hirtz have, however, in recent years called attention to the fact that the deforming variety is not the only form of gonorrheal rheumatism which is accompanied by lesions involving the bones; moreover, they insist that the diaphysis as well as the epiphysis may be involved and that the bone itself as well as the periosteum plays a part in the process. Achard observed a young woman, who, following a non-deforming gonorrheal arthritis of the left knee, had a marked general thickening of the left femur, which he considered to be undoubtedly due to a hyperostosis. The case of Hirtz was that of a young girl, aged 19 years, who, in the third month of gonorrheal rheumatism, presented a marked swelling of the lower two-thirds of the right femur. The swelling was very indolent, developed insidiously and was discovered accidentally. The bone seemed double its normal thickness and the consistency of the tumor was such as to suggest an hyperostosis, even though the skiagraph showed the part played by the bone itself to be comparatively slight. As to the gonorrheal nature of the condition, he thought there was no doubt, coming on, as it did, in the course of a bad gonorrheal rheumatism, while the arthritis of the right knee still persisted and a vaginal discharge was present; moreover, there was no evidence of syphilis, hereditary or acquired.

While admitting that the inflammation may extend from a gonorrheal joint along the adjoining long bones to a greater or less extent, Durand and Nicolas[2] are doubtful regarding the actual involvement of the periosteum and bone, and are inclined to think that the thickening, which we make out in these cases, is due to an inflammatory infiltration of the tissues outside of the periosteum.

They assert that, inasmuch as they can find no account of an operation or autopsy performed on the bone, the exact nature of such cases is not known, but, granted that a periostitis or periostosis does exist, they think the process cannot be compared to that of an osteomyelitis, since there is no suppuration or sequestration.

According to them, there are no osteoperiostitic changes, but an inflammatory induration which is in the neighborhood of the bone without really altering its elements and in no case would anything seem to show the existence of an osseous lesion. In the absence of anatomic demonstration it would seem to them that neither the clinical nor radiographic signs can be considered convincing. On clinical examination they find simply a deep swelling or tumor, usually limited to the vicinity of the joint, but able to extend more or less along the diaphysis; there exists, however, no sign which permits them to say definitely that the bone or periosteum is involved; moreover, they state that no *x*-ray has shown indisputably the presence of any alteration in the bony substance.

In support of this view, they report a case of acute gonorrhea with suppurative gonorrheal arthritis of the

1. Hirtz, E.: Ostéopériostose hypertrophiante blennorrhagique de la diaphyse fémorale, Presse méd., 1900, II, 407.

2. Durand and Nicolas: Sur l'ostéopériostose hypertrophiante blenorrhagique des grandes os des membres, Lyon méd., 1907, cix, p. 693.

right knee, in which there was great edema of the right leg and thigh, most marked near the knee. Later on, examination showed a hard thickening above and below the knee, which the authors considered to be due to an infiltration of the soft parts and not to a periosteal thickening, as the skiagraph showed no bony changes, and the induration and thickening gradually disappeared.

My case and others in the literature, however, show that the gonococcus can produce marked changes in the bone and periosteum. I cannot speak authoritatively regarding the exact nature of the thickening and induration about the long bones in the neighborhood of gonorrheal joints, but I am inclined to think that in the majority of these cases, the bone and periosteum are not involved, while in some there is probably a definite osteoperiostitis.

We are all familiar with the cases of exostosis of the os calcis of gonorrheal origin, described by Jacquet,[3] on the posterior surface of the bone beneath the tendo Achillis, and by Baer,[4] Durthe and others, on the plantar surface of the bone at the origin of the flexor brevis digitorum. Four of the five cases operated on by Baer were examined bacteriologically and in three of these gonococci were demonstrated. It seems to us that these are clearly cases of gonorrheal osteoperiostitis.

Cases of supposed gonorrheal osteoperiostitis of other bones have been observed by Claisse and Ozenne.

Claisse[5] reports the case of a girl, aged 19, with gonorrhea, in whom a persistent pain, increased by sudden movement or pressure, appeared about the costal cartilages, soon followed by the development of a series of nodosities in this region, suggesting a gonorrheal rosary. The gonorrheal origin of the lesions was not definitely demonstrated by bacteriological examination.

Ozenne[6] describes the case of a man, aged 25, who had a definite gonorrhea, which was apparently cured. Shortly afterward, apparently without traumatism, a pain appeared in the lower portion of the right leg and a swelling was found on the anterior and internal aspect of the leg, three finger-breadths above the ankle. The skin over the swelling was slightly reddened and the surface temperature elevated. Over the lower end of the tibia the swelling was well defined, hard, flat and immovable. Although gonococci were not demonstrated by incision, Ozenne considered this to be a case of gonorrheal periostitis with tenosynovitis of the extensor tendons of the foot. The swelling disappeared gradually without treatment other than a compression bandage.

Gonorrheal osteomyelitis is a very rare condition, though theoretically it is hard to understand why it is not as frequent a complication of gonorrhea as arthritis. I have been able to find only two definite cases in the literature.

Ullman,[7] in 1900, reported the case of a man, 27 years old, who in the third week of a second attack of gonorrhea had a chill which was soon followed by pain in both elbows. The lower end of the left humerus became greatly swollen and tender, and the skin over it reddened. A diagnosis of acute osteomyelitis was made and at the operation a considerable amount of pus was found in the marrow cavity. Gonococci, unmixed with other organisms, were demonstrated in the pus. Ullman thinks that if we took a careful history, as regards gonorrhea, in cases of osteomyelitis and tried to grow the gonococcus on the proper medium, we would find more of such cases to be gonorrheal in origin.

Heymann[8] has reported the case of a man, aged 40, who had had several attacks of gonorrhea, the last attack being about a year before admission. When seen by Heymann in September, 1908, he had had a cold for fourteen days, and during this time micturition had been painful. On examination he looked sick and feverish, and there was a slight urethral discharge, though gonococci were not surely demonstrated. The prostate was swollen and tender. On pressure the swelling of the prostate largely subsided, but the patient soon had chills and fever, which indicated, according to Heymann, that the emptying of the prostatic abscess had forced some organisms into the general circulation. After ten days the fever disappeared, but four days later the patient complained of pain at the lower end of the left tibia, and a tender, swollen area was found in this region. Conservative treatment failing to give relief, operation was performed. The periosteum was found to be stripped away from the bone and there was a small collection of pus beneath it. Pus was found in the marrow cavity and gonococci demonstrated in it.

Cupler's[9] patient, a young man with acute gonorrheal urethritis, developed an arthritis of the left shoulder. The joint was aspirated and 20 c.c. of fluid, containing gonococci, was removed. Failing to relieve the pain, the joint was opened the following day, a few cubic centimeters of fluid being found in the joint. There was a cavity in the head of the bone containing necrotic material, and smears made from the contents of the cavity showed the presence of gonococci. In this case, however, it cannot be said whether the bone or joint infection was primary, and I am inclined to believe that the bone involvement was secondary to that of the joint, as erosions of the bone are not infrequent in gonorrheal arthritis.

As I said at the outset, the literature concerning gonorrheal bone lesions is very meager, and, inasmuch as my case is the only one I have been able to find in which the *x*-ray has shown a marked thickening of the diaphysis, as the result of a gonorrheal infection, I have felt justified in putting it on record.

3. Jacquet: Ann. de dermat. et syph., 1892, p. 681.
4. Baer: Gonorrheal Exostosis of the Os Calcis, Surg., Gynec. and Obst., 1906, ii, 168.
5. Claisse: Ostéopathies blenorrhagique, Bull. Soc. méd. d. hôp. de Paris, 1897, xiv, 1261.
6. Ozenne: Note sur un cas de périostite de la face interne du tibia et de synovite tendineuse des extenseurs du pied d'origine blenorrhagique, Bull. Soc. franç de dermat. et syph., Paris, 1895, vii, 82.
7. Ullman: Osteomyelitis gonorrhoica, Wien. med. Presse, 1900, xli, 2225.
8. Heymann: Osteomyelitis gonorrhoica, Ztschr. f. Urol., 1909, iii, 720.
9. Cupler: Note on Gonorrheal Osteomyelitis, Ann. Surg., 1907, xlv, 121.

The Spirit of Research.—The investigator, says Professor Cannon in *Science*, is first of all one who thinks as much of what we are ignorant of, as he does of what has already been made clear. His chief interest is in the territory which has not yet been traversed. Indeed, he is to be classed with explorers and pioneers. For such men the complacent contemplation of things accomplished is intolerable—they chafe under the routine of established ways and find the satisfactions of life in adventures beyond the frontiers. Harvey, among the first of modern discoverers, expressed the spirit of research when he wrote: "It were disgraceful, with this most spacious and admirable realm of Nature before us, and where the reward ever exceeds the promise, did we take the report of others on trust, and go on coining crude problems out of these, and on them hanging knotty and captious and petty disputations. Nature is herself to be addressed; the paths she shows us are to be boldly trodden; for thus and whilst we consult our proper senses, from inferior advancing to superior levels, shall we penetrate at length into the heart of her mystery.

AIMS IN MEDICINE*

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William Paul Crillon Barton was graduated from Princeton College in the class of 1805. It was the custom at that time for each member of the class to assume the name of some celebrated personage; young Barton adopted that of Count Paul Crillon, and the initials " P. C." were retained by him through life.

He took his degree in medicine at the University of Pennsylvania, where he studied under the direction of his uncle, Dr. Benjamin Smith Barton, graduating in the class of 1808. His thesis on "Nitrous Oxid" was considered a classic for many years.

After an internship in the Pennsylvania Hospital, he was appointed a surgeon in the Navy in 1809. In July, 1811, just 100 years ago, the Secretary of the Navy, Mr. Paul Hamilton, directed Surgeon Barton to outline a plan of organization for the Medical Department, to be presented to Congress for approval. It may be justly said that Barton was the father of the Medical Department of the Navy.

Professor Holland, in his admirable history of the Jefferson Medical College of Philadelphia from 1825 to 1908, states that, in the summer of 1826 Dr. William P. C. Barton was appointed to a new chair of materia medica, and we find later on, when the Bureau of Medicine and Surgery was created in the Navy Department, the same William P. C. Barton occupying the office of Chief of Bureau, in reality the first Surgeon-General of the Navy.

Surgeon Barton published an account of the outlining of his plan for the organization of the Medical Department of the Navy, and modestly said that his schemes were thrown together with such order and system as was permitted by the limited time he had to devote to the subject under the pressure of professional duties on shipboard. He stated that the report containing his plans was certainly less perfectly digested and more carelessly treated than the importance of the subject demanded, because it was written during a tempestuous voyage from Norfolk to New York in the sloop-of-war *Hornet*, with the ever-to-be lamented Captain Lawrence, under the disadvantages, too, of seasickness and acute mental affliction from the recent loss of a friend.

In a foot-note he speaks of his friend Lawrence in the following terms:

> At the mention of the name of a man, dear to every American, and whose patriotism and valor are deeply registered in our memories, I hope I shall be excused in giving way to an impulse of feeling by declaring that, in sickness and in sorrow, I found in this magnanimous hero a comforter who administered the sweetest solace with even feminine tenderness; such were the superior virtues of a man who was gigantic and valorous in war.

Surgeon Barton was a prolific writer, devoting much attention to botany in connection with materia medica.

The dedication of his treatise on the internal administration of government and naval hospitals is as follows:

> To the Flag Officers, Captains and Surgeons in the Navy of the United States:
>
> A NAVY—rendered glorious by the brilliancy of its achievements and which has added luster to the nation, given dignity and importance to its character abroad:
>
> A NAVY—to the seamen of which, by their prowess and their victories, the skilful, the valorous, and the hitherto unconquered naval sons of Britain are forced to yield the palm of superiority:
>
> A NAVY—thus eminently distinguished even in infancy, and which has conquered its way to public favor and estimation: This attempt to promote its interests is most respectfully dedicated by the author.

In his concluding remarks in this treatise, Dr. Barton has to say the following:

> In the foregoing pages I have been necessarily led into the exposition of many and palpable abuses in the Medical Department of the Navy. There are not a few persons with whose interests such an exposition will very much interfere; from them, therefore, I expect no thanks; on the contrary, I look for caviling and censure at their hands. I am, however, prepared to meet it.
>
> My independence in expressing my sentiments on points of duty while in the Navy procured for me not a few enemies; but while I regret this consequence of a line of conduct that thrice the inconvenience could not have made me forego, I have the consoling assurance of having acquitted myself in the way of duty to the entire satisfaction of officers with whom I have served, whose regard and good opinion were of moment in my estimation.
>
> Both my feelings and my fortune have suffered by the determination I made when I first entered the service, from the execution of which I never in a single instance swerved, to pursue that line of conduct that I deemed consistent with the faithful performance of my duty and my trust, however such conduct might clash with the private or public interests of others, or differ from the customary proceedings of persons similarly situated with myself.

Such were the sentiments of the man who had most to do with formulating the plan of organization of the Medical Department of the Navy and whose name appears in that brilliant and courageous group of original professors who have made possible the great institution of learning from which you graduate to-day.

Your present faculty is built of precisely the same timber, and in seeking the personification of the highest aims and ideals in medicine I heartily commend their characteristics to your most careful study. I am proud to bring to your notice the close intertwining of the roots of origin that have since grown into the two great medical organizations—Jefferson Medical College and the Medical Department of the Navy.

Since 1842, when Dr. Barton became Surgeon-General, your alma mater has given us no less than 100 medical officers, and among them are names that have helped to make naval history in the past and are adding further laurels to medicine in the Naval Service to-day. I am proud to tell you that the last commission signed by the President is now in possession of a graduate of Jefferson and a former intern of your hospital.

Is it at all surprising that the mere mention of the name of your great institution of learning should awaken sentiments of affection, esteem and respect in the Navy? I can assure you that the great honor and privilege your board of trustees has conferred on the Medical Corps in inviting its ranking officer to address you on this occasion, has in nowise lessened this warm spirit of fraternalism.

As you go forth to-day after four years of association in lecture rooms, laboratories, hospitals and elsewhere, each inspired with a resolution to solve the problems that lie before him in accordance with the high standards in which you have been so thoroughly drilled, the conviction will be brought home to you that these problems have taken on a new and very personal form calling for the development of a resourcefulness and an indi-

* Valedictory address delivered before the graduating class of Jefferson Medical College, June 5, 1911.

vidual effort that had not been exacted before. Your bearing and conduct in meeting these new responsibilities, even at the outset of your careers and in every hour of every day thereafter, will determine largely the measure of success that will be accorded you in the future.

You have chosen the grandest profession of them all, without exception, one demanding courage of the highest order, sacrifices without end, a profession little appreciated and less materially rewarded for what it has accomplished than any of the others.

It is well for you at this time to endeavor to develop proper aims and adopt high ideals to guide you in your every-day life, so that the impulse to act squarely and properly to yourselves, your patients and your community will be involuntary and unhesitating.

It has been well said that he is best educated who has the largest and most manageable series of orderly and useful habits in the storehouse of his brain and other nerve-centers. These habits include and cover what are ordinarily understood to be facts as well as reasoning and action. That brain is best equipped which, on the greatest number and variety of occasions in life, acts in a fairly automatic manner in the best way for the usefulness and happiness of the individual. Such a personality not only has the highest order of education, but also has the largest development of character in its broadest sense.

In his essay on two kinds of conscience, Norman Bridge has given us much food for thought and a guiding hand in the selection of high aims in medicine in its relations to individuals and its activities in the community.

He defines conscience as that governing principle, that guide of action, which gives a standard of conduct and judgment to every man. Conscience is largely a matter of education; to some degree it is inborn and, therefore, instinctive; applied to things, beliefs and principles, it is substantially all acquired. In order better to understand the many phases of human conduct, Bridge has described two kinds of conscience; one he has called the personal, or individual, conscience, the other the company, class or collective conscience.

The individual standard is perhaps the higher. It is this conscience that impels man to do what he alone believes to be right. It is the conscience of solitude and tranquillity—of man communing with himself.

The collective, or group, conscience is the standard of the community, and is an altogether different standard from the personal one. The two are often in conflict, although often completely in accord. The feelings and emotions of this standard are in general the ever-present emotions of mankind. All must act outwardly, at least, with slight variations, for the benefit of the race. The collective or group conscience is the executive or official conscience.

It is the personal or individual conscience that tends to impel the soldier, when first under fire, to flee. The group conscience, which has been developed by training and discipline, holds him in ranks with his fellow combatants.

The personal, or individual, conscience has had much to do with the great advances, the epoch-making stands taken by individuals. For instance, Ambroise Paré, the great French surgeon, was ridiculed and called an impostor when he advocated the ligature for arresting hemorrhage, to replace such barbarisms as the routine use of boiling oil and the actual cautery. John Hunter was accused of wasting his time in studying with painstaking care the growth of a deer's horn, but it was this study which led to a knowledge of collateral circulation and emboldened him to ligate the main vessel in aneurism. Harvey spent eight long years of investigation and research before he published his views of the circulation of the blood, which led to his being discredited, and it was fully a quarter of a century before this established scientific truth became generally recognized.

The difficulties of Jenner were even greater than those of Harvey, and, judging from certain well-meaning but misguided efforts that are being made strenuously to-day, not all are yet convinced of the efficacy of vaccination against small-pox. The pendulum has swung the other way, and the tendency now is hysterically to grasp the latest thought or idea, claiming vastly more for it than its originator proposed, only to meet with disappointment and discredit where both are unnecessary.

It is the group conscience, on the other hand, which rules the mob. A normal development of the two kinds of conscience to meet the vicissitudes of various situations leads to the most satisfactory results. In caring for an individual ill, the dictates of the personal conscience should be yielded to; when the welfare of a community is at stake, the promptings of the collective conscience should govern. In a military establishment the individual, or personal, conscience and its promptings are subordinated to the dictates of the group conscience, and this is justified by the objects and aims of such an establishment.

Surgeon Barton's activities and reforms were impelled by a pronounced development of the individual conscience and their beneficent effects are felt to this day.

The internal dissensions and difficulties with which Jefferson College was beset in its early days, as recorded by Professor Holland, resulted from too much personal conscience, and a neglect of the collective standard. With the establishment of a normal balance between the two began a progress almost unparalleled for brilliancy.

Let us see how the cultivation of these two kinds of conscience, in their proper proportions and relations, will guide us to a wise selection of our aims in medicine. The proper development of the personal conscience will make impossible commercialism, the dividing of fees, and other growing abominations of the day. The welfare of the patient will be our immediate consideration; his personality will receive the close study it merits, and we shall not be treating disease, as such, with the possible future applause of the medical society, or the allurements of a statistical report, before us. We shall not be wholly engrossed with the laboratory findings or the pathologic report.

Our diagnoses will not be made in the laboratory and in the *x*-ray room. The internist will not be found temporizing and unduly postponing the summoning of the surgeon with the misleading notion that he is practicing conservatism. Often bold, timely operative procedures are of the highest type of conservatism, in that they may not only save life and safeguard organs that would otherwise have become involved, but they may lead to a restoration of function with a minimum of after-effects that delay would have made quite impossible.

The cultivation of that conscience that comes of a man communing with himself will lead us faithfully to train every sense with which God has blessed us, to develop manual dexterity, a touch of gentleness with strength and precision that will be recognized at once by our patients. Sight, hearing, smell and taste should not be neglected. Bandaging to-day is almost a lost art; the study of the mechanics of internal medicine and sur-

gery has not received the attention its importance merits. How often do we find the narrowing of an outlet, a sluggish muscular wall or an inconsequent deformity of the foot, for instance, inducing conditions of such gravity that the slight and often perfectly remediable mechanical defect is quite lost sight of!

The enormous importance of the laboratory and its brilliant achievements in medicine are fully appreciated, and due credit is accorded the courageous minds that have evolved and demonstrated theories and facts that stand out as the milestones of real progress in the advance of medicine toward the goal of exact science.

Among the unfortunate consequences of this great advance is the dwarfing of the purely clinical side of medicine. The impulse to turn to the laboratory for the diagnosis, and afterward to try to fit the laboratory findings to the individual before us, is undoubtedly the tendency of the day. We should center on our patients at the bedside the closest kind of study, and let there be, *if necessary*, a tentative diagnosis, turning to the laboratory, afterward, for a confirmation, or a refinement of our conclusions. On the other hand, if we are not well trained clinically we should be quite at a loss if we found ourselves, perchance, beyond the comforting reach of the Roentgen-ray apparatus, and the diagnostic and therapeutic laboratory.

What bearing has the development of the so-called crowd or collective conscience on our aims in medicine? Let us see. With the growth of this standard the appalling record of 600,000 lives sacrificed annually in this country to preventable diseases would soon dwindle into comparative insignificance; there would be undoubtedly to-day a department of health with a representation in the cabinet, and the proper institution of sanitary administrative methods would yield in our civil communities the brilliant results that have followed these methods where the medical officers of the Army and Navy have been permitted to carry them out, hampered possibly only by insufficient funds, or the military features of the situation.

It is more than probable that this crowd conscience will be developed, as it should be, only when its importance to the masses is brought home to them on a dollars-and-cents basis. The lack of the so-called executive or collective conscience in these United States is not only amazing—it is appalling. The fact that this great country has no exhibit at the International Exposition of Hygiene, in Dresden, now in session, is perhaps not fitting for me to comment on.

You hear young men say that medicine is overcrowded and that so much has been accomplished that there is little left to be done. Should there be no further discoveries, or advances, in medicine and surgery from now on, and we were permitted to make use intelligently of the facts now in hand, the achievements of preventive medicine, administrative sanitation and bold surgical conservatism would startle the world.

The crimes of commission that find their way to our criminal courts sink into insignificance when compared with the grave crimes of omission and their far-reaching, direful consequences which we, in hardened indifference, take as a matter of course. Here is an almost untouched field. Results can come only, however, from an awakening of the crowd conscience through education, team work and convincing demonstration.

An example of the beneficent effects of the collective conscience is seen in the boards of trustees, guilds, societies and organizations that make possible our great hospitals and educational institutions. These splendid citizens often contribute liberally in a financial way and bring to bear their business training and administrative ability, to say nothing of time and painstaking labor, in this field of work. They should share with us the honors that may come to us, for they have made possible what measure of success may be ours.

President Taft showed thorough appreciation of this most excellent type of citizen when he eulogized recently the man who contributed to the revolutionary cause, without hope of reimbursement, $650,000—an enormous fortune for those days. Such as he made the success of our arms possible, and great sacrifices of this sort merit recognition along with the actual achievements of war. Those who by their sagacious activities awaken and keep alive intelligent patriotism, thus making possible an approach to preparedness when the horizon is not darkened by war-clouds, should be classed with the great leaders of peace times. The pseudo-patriotism and hysterical outbreaks that often come with the declaration of war are out of time and out of tune, and while ostensibly well meaning, are of little account.

The activities of physicians in civil life are almost entirely along humanitarian lines, while in the Army and Navy humanitarian considerations are of secondary importance, military duties being paramount. To understand properly the necessity for this subordination of the humanitarian aims of medicine, it will be well to outline some of the unusual features of the fighting establishments, and the Navy will serve admirably for the purpose.

The Navy is manned, equipped, organized and maintained to fight. The fleet is the Navy. The development of the highest type of fighting efficiency in the fleet should be the aim of all concerned. This problem is decidedly more intricate and difficult than is generally realized, both inside and outside the service. The battles of the future will no longer be the battles of brawn; they will be the battles of brains and they will be won by the combatant showing the highest development along this line. Science has taken a hand, and in the front rank we find specialized medicine, chemistry, mathematics, mechanics, physics and many scientific offshoots so harnessed, adapted and molded as to make possible a grade of military efficiency that was scarcely dreamt of a decade ago. Consider for a moment what the development of electricity has accomplished; what chemistry has contributed in the way of powder alone; what oil as fuel will do!

Each new activity brings to bear on the personnel new influences often seriously damaging to efficiency. It is of the greatest military importance that the medical department should not only familiarize itself with these scientific specialties and be prepared to repair the damage to the personnel from their employment in the fleet, but what is still more important, it must prevent and actually is averting this damage.

Side by side stand the lieutenant and the surgeon; the one by drilling and discipline striving to attain a high grade of efficiency, the other, who has selected at the recruiting station the physical type best fitted to meet the peculiar requirements, watches intently for effects that are likely to impair efficiency. For example, recently, on an endurance run, thirty odd men, utterly prostrated, were carried out of the fire room of a ship.

What was the cause of this serious breakdown in the personnel? Was it due to excessive heat, to contaminated air, to improper food or water? Or was it due to the assignment to duty in the fire room of a type physically unsuited to the arduous exactions of that

station? These are the questions that would naturally come to the mind of an alert medical officer, and it is along these lines that the Bureau of Medicine and Surgery is bettering conditions.

The activities of the medical department are by no means confined to the personnel. The plans of new ships are always referred to the Surgeon-General before they are finally approved by the Navy Department. It is his duty to give them careful study, recommending such changes as in his opinion will keep the physical make-up of the personnel at the highest pitch, and at the same time will in no way impair the fighting possibilities of the ship. These recommendations are not in any sense prompted by humanitarian considerations; they are made solely to promote and maintain military efficiency.

What is the character of the personnel with which we have to deal? Let us consider two types of officers, the two whose duties and responsibilities are more closely allied than any of the others—line officers and medical officers.

The line is recruited from all over the country, from practically every grade of society, who, after passing rigid professional and physical examinations, begin a four years' technical course at the Naval Academy with an additional two years spent at sea, before they are finally commissioned. During the four years at Annapolis, the highest aims of their profession are instilled into them, such as discipline, honorable dealing, manliness, physical and moral courage, a proper conception of duty and its responsibilities, loyalty and patriotism and a willingness unhesitatingly to make that greatest of all sacrifices for their country's sake should occasion demand it. This splendid spirit was highly developed in that superb soldier, the late Captain Capron of the Army, who, on hearing that his son, a Rough Rider, had been wounded during the battle of San Juan Hill, in which both had been engaged, sought him out to find him lying dead at the roadside. Brushing back the hair from his brow, he scanned the features, strong even in death, and said, patting him affectionately on the head, "Well done, old fellow."

The development of this splendid spirit is by no means confined to the line; it underlies and guides the activities of the entire commissioned and enlisted personnel of the Navy.

The Medical Corps is the only branch of the service which may select its own personnel. Not only must a candidate be a graduate in medicine, but he is required to have served in a great civil hospital and present a diploma as a guarantee of the character of this service, before he is eligible to examination for a commission as assistant surgeon. An examining board then passes on his physical and professional qualifications, and if he meets the requirements, he is commissioned and enters the Naval Medical School, where he is taught the military features of his duties and is given special training to fit him for the great responsibilities of his new career. He is required to pass still another examination on the completion of this course, when he is assigned to the fleet for duty.

To have the right to wear the uniform of the United States Navy to-day is one of the greatest honors that can come to any of us, and that uniform which bears the insignia of the Medical Corps, with all it implies, is without a peer in the service. It is hoped that you will carefully consider these facts in choosing your life work in medicine

And what of the enlisted personnel? With the passage of masts, spars, sails and wooden ships went much of the romance of the sea, and along with the rest that faithful, resourceful type, the old-time sailorman. He is but a memory to-day, having been replaced by the alert young seaman-mechanic. The pace, with its complicated responsibilities, became too fast for the old fellows, and they have dropped out of the race completely.

In the Atlantic Fleet on its round-the-world cruise the average age of the enlisted personnel was about twenty-one years, on hearing which some humorist remarked that the Navy was manned by boys.

In order better to understand this new-type seaman-mechanic, let us look into a turret and see him actually at work. There are innumerable other situations in the complex make-up of a battleship that might be selected, still the turret will perhaps serve our purpose as well as any.

Side by side within this armored citadel lie the breeches of two monster 14-inch guns. The guns with their crews are separated by an incomplete partition or bulkhead, thereby stimulating a spirit of rivalry between the two gun-crews. There we see the turret officer, the turret captain, the gun-pointers and the crews. Gold lace has given way to dungarees; the cap alone distinguishes the commissioned officer—the men are nude to the waist. Each man is at his station, forming an unbroken chain from the gun to the magazine below with its tons of powder and shell.

The range of these guns is some 14 miles; the projectile, propelled by the burning of 350 pounds of powder, weighs ¾ of a ton, costing about $500 for a single discharge. The monster blast is likely to destroy all unprotected ear-drums within a given zone, at the same time liberating gases poisonous in the extreme, so much so that, in one ship in which artificial ventilation was maintained during battle, several men were found unconscious in a single compartment into which the blowers had driven these noxious fumes.

From the fighting top comes a message to the central station in the bowels of the ship; a calculation is hastily made and directions are sent out to the turrets. The guns are trained accordingly; the gun-pointer picks up the enemy with his telescopic sight; the cross-wires are on him, the order to fire rings out, the gun is discharged and mathematically there should be a hit. We have, however, a personal element to take into consideration.

The picture is inspiring. The perfect team-work, the silence, the earnestness of great purpose written on each face strikes even the casual observer. The hazards of the situation are fully appreciated by all, yet the very dangers tempt those of the proper make-up for a fighting organization to seek these assignments. By constant drilling, mutual dependence, and perfected discipline the chances of mishap become very small; yet one weak link in the chain may instantly hurl all into eternity and perhaps destroy the ship.

What part does the medical officer play in all this? It is his duty to weed out the physical weaklings, or build them up, to safeguard these picked men from disease, to eliminate those whose nervous make-ups unfit them for this kind of duty; in other words, he has before him not only a study of the gross physical features of the personnel, but their psychologic characteristics as well. Let us center on the gun-pointer. If this man is of a high-strung nervous type, or has "too much" education, it has been found that, when the cross-wires of his telescopic

sight are on the target, his alert mind is centered on the possibilities of the ignition of 350 pounds of powder at his side, and the chance for a hit has slipped by. His personal conscience has failed to be subordinated to his crowd conscience as it should be in this situation. It has been found that the use of telescopic sights at drills has in many instances seriously impaired the vision of these men. This break in the chain is of serious moment and is receiving the careful study its importance merits. The constructors may give us stability, the engineers high speed, the ordnance officers effective rifles and the commanders maneuver with consummate skill, still if the gun-pointers cannot see straight we are not going to have hits and the outcome of battle might hinge on this defect.

It is believed that the next naval battle between powers of the first class will last less than thirty minutes. By that time either the one or the other combatant will probably be annihilated or the supply of ammunition exhausted. The wounds of naval warfare are peculiarly destructive—lacerating tissues, splintering bones, killing outright—and are attended with profound shock; practically all are infected from the start. What are the aims of the medical department during battle? They should be military absolutely; humanitarian activities, although greatly to be desired, have no place in this situation, might even lead to additional casualties and possibly the failure of our arms.

At the close of battle the activities of the medical department at once become humanitarian, and our efforts are often exerted, not only in behalf of our own wounded, but in behalf of those of the enemy as well.

At this point the heretofore diverging paths of civil and military medicine are reunited on humanitarian grounds under the beneficent influences of the red cross. Our military efforts may lead to broad humanitarian results in making victory more decisive, thus entailing fewer casualties, and, further, the war itself may have been waged by reason of inhumanities which would cease with the success of our arms. The humane treatment of prisoner-patients of war by medical officers, before and after hostilities have ceased, is a potent factor in reestablishing friendly relations afterward.

Concentration in the past on the purely military features of the fleet has led to a one-sided development with a neglect of the humanities of naval warfare that would have made possible a breakdown in the medical department, the most appalling in history.

I have devised a plan which will, with the establishment of the Naval Medical Reserve Corps, efficiently attend to all our humanitarian responsibilities, and which bids fair to revolutionize this feature of naval warfare, giving to the wounded the highest type of surgical care from the firing-line until they are finally disposed of, and this they surely merit; it is in this field of work that I shall one day turn to you, my respected colleagues, for support.

In addition to the complex responsibilities of naval medicine, outlined, I fear, at too great length already, are the duties that go with service in the field which are precisely the same as those of the Army, except that they are naturally not quite so extensive. There has been no war in recent times, however, in which the navies of the world have not taken part in operations on shore.

The proper equipment and execution of these multifarious activities have led to the establishment of great supply depots, hospital and supply ships and the like; there are over 2,000 individuals serving in and under the medical department of the Navy to-day.

A word in conclusion as to what is done along humanitarian lines. Each ship has its sick-bay which may be likened to an army post hospital, and there are some fifty odd ships in commission.

The hospital ship *Solace*, equipped with 200 beds, with facilities equaling those of your metropolitan hospitals and carrying a number of skilled specialists, is serving with the Atlantic Fleet. There are nineteen general hospitals in commission, some of them among the largest and best equipped in the country, with six more building, constituting one of the largest hospital organizations in the world. We attend as well the large body of civil employees at navy yards and stations and the inhabitants of our island and outlying possessions. In this humanitarian field of work our aims and activities are precisely the same as those of civil practitioners, with the added interest of service in Alaska, Japan and the tropics.

From what has been said it is plain to be seen that in the Navy certainly the personal conscience must be subordinated to the collective conscience, and humanitarian aims give way to the military, up to a given point, at least. The medico-military duties referred to necessitate a profound study of all activities connected with naval warfare, in order to implant in the service, intelligently and effectively, what scientific medicine, in all its ramifications, has to offer to enhance military efficiency. It gives me great pleasure to express my unqualified appreciation and gratitude to the many skilled specialists in civil life, and, particularly, to the Faculty of Jefferson Medical College, for the painstaking, patriotic assistance they have unfailingly given us in our efforts to accomplish this great work.

If a single individual within hearing of my voice, or elsewhere, is helped in the choice of his aims and ideals in medicine, or in any other calling—if he is aided in any measure to the development of such a proportion between his individual conscience and his collective conscience as to lead to personal success and broadened public service in the community in which he resides, I shall feel fully recompensed for the effort that has been made.

SOME TENDENCIES IN MEDICAL EDUCATION IN THE UNITED STATES*

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THE PASSING OF THE INFERIOR MEDICAL SCHOOLS

If you compare medical education in the United States twenty years ago with what it is to-day, you cannot help but be impressed with the remarkable change which has taken place. The period has witnessed a reform which is noteworthy in history. During the past decade, especially, there has been a steady decrease in the number of inferior medical schools and an elevation of standards in the better schools. The country has passed rapidly from a stage in which the proprietary medical school was dominant to one in which all, or nearly all, of the better medical schools are the medical departments of universities.

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* Based on remarks made at the convocation exercises at McGill University, Montreal, June 5, 1911.

* Owing to the lack of space this paper has been reduced nearly half. The unabridged article is printed in pamphlet form and will be sent by the author, or by THE JOURNAL, on receipt of a stamped directed envelope.

It was not easy to bring such a change about. Every reform entails hardships; attempts at betterment invariably excite some animosity and antagonism. It says much for the spirit of the men in the medical profession and in the faculties of the medical schools that the majority of them have kept in mind the welfare of the profession, of medical education and of human service, and have been so ready to sacrifice their private interests when such self-denial was demanded.

[The author then discusses: (1) The reduction in the number of medical schools; (2) the increased requirements for admission; (3) the elevation of standards in teaching.]

The success of the better schools, the enthusiasm of the students trained in them, the opportunities which have opened up for these students after graduation, the scientific investigations leading to publication which have been carried on; all have contributed to spur other medical schools in different parts of the country to emulate the examples set.

There have been two main difficulties: (1) the financial one of equipping the expensive laboratories of anatomy, physiology and pathology and paying the staff sufficient amounts to permit them to devote their whole time and energies to the work; and (2) the absence of endowed hospitals under the control of medical schools or universities, into the wards, dispensaries, and laboratories of which students could be taken actually to participate in the routine work of diagnosis and treatment.

[Dr. Barker then describes the agencies which have been influential in securing the reforms, emphasizing especially the work of the Council on Medical Education and that of the Carnegie Foundation for the Advancement of Teaching recorded in the report of Mr. Abraham Flexner.]

The Council has performed its work almost wholly through the cultivation of medical opinion; it simply gives publicity to the information which it collects. It has no power whatever to dictate to medical schools or to set standards either for the schools or for the state examining boards, but it has so deliberately and successfully, through the currency given to the results of its inquiries, worked on the collective medical mind in the United States, that a moral pressure, irresistible in its coercive force, has come to be exerted. A school, for example, which is heralded in the over 50,000 copies of THE JOURNAL of the American Medical Association as one which turns out graduates of whom more than 20 per cent. fail at the state licensing examinations, or another, which, after personal and unbiased inspection by members of the Council, is classified as a "rejected" school, has a sealed fate.

The Council has been none the less successful for having avoided utopian attempts; it has been satisfied with a gradual, though steady, stride toward attainable ideals. It recognizes the manifold difficulties of the pedagogic situation, is aware of the necessity of taking time, of educating those concerned and, especially, of the indispensableness of endowment from the state, or from private funds if desired reforms are to be instituted. ...

Through the various influences above mentioned inferior medical schools are rapidly being weeded out and the schools left are steadily being improved. The nation has set itself resolutely to the task of reconstruction and it will not rest satisfied until its medical schools have reached a degree of efficiency and attained to a power of public service which will bear favorable comparison with similar institutions anywhere in the world.

POSITION OF AND SOME TENDENCIES IN THE NON-CLINICAL DEPARTMENTS

On examination of the non-clinical departments of the better medical schools in the United States it will be seen that a definite policy has been established; the principles of this policy must sooner or later be observed by every medical school which hopes that its conduct may be held in good repute.

THE POLICY ESTABLISHED

The essentials of the policy include: (1) commodious laboratories equipped with all modern appliances for teaching and investigation in anatomy, physiology, pharmacology, biochemistry and pathology, (2) "full-time" professors with, for the more part, "full-time" assistants, trained or undergoing thorough training in these fundamental disciplines, men who are enthusiastic teachers and have a zest for, and success in, prosecuting original inquiries, and (3) an annual budget at the disposition of the staff adequate for improvement of equipments, for supplies and expenses and for the services of janitors, clerks and mechanical assistants. These departments are, therefore, not only places in which well-organized courses of instruction for medical students are offered; they are also centers in which knowledge is seethingly advanced.

Under this policy the non-clinical departments are flourishing. Glance through "American Men of Science" and make lists of those who have been led to cultivate these fields and have been notably successful in the work. You find an imposing array. Look over the journals, most recently founded, devoted to the different subjects and the proceedings of the scientific societies and you will be gratified to find how speedily and notably knowledge has been and is being increased.

The best American work is receiving adequate foreign recognition, and while but few European students have thus far been attracted to American non-clinical laboratories for work, the stream of students which formerly flowed in the other direction has to a large extent ceased.

DANGERS THREATENING THE NON-CLINICAL DEPARTMENTS

The non-clinical chairs in the medical schools may be to a certain extent, however, in danger. The possibility of evil has arisen not at all through hostile intention, but rather through certain conditions, partly external, partly internal, which may place them in a trying situation. Of these conditions I shall refer now only to three, viz., (1) the rise of institutions devoted solely to research, (2) the rapid formation of medical faculties in state universities, and (3) the pecuniary penalty attaching to chairs on a "university basis."

[In the full address these three conditions are discussed at some length. While the advantages of the institutes for research are emphasized, it is intimated that these institutions should be integral parts of universities and that the latter have made a serious mistake in losing the research institutes through failure to recognize the necessity of separate provision for the functions of teaching and research.

The author also explains why the demand for professors in the non-clinical departments has been greater than the adequate supply.]

. . . Thus, through the exit at the top of many of the best and through the entrance at the bottom of too many immature and partially trained, the high standards thus far maintained for the non-clinical chairs, run some risk of depreciation. At present, positions, such as they are, can be obtained too easily; the period of training is so shortened, as to make the attainment of a high grade of scholarship difficult. There is the danger-

erous possibility, too, of promoting to full professorships men of mediocre talent, who, in a longer and more exacting discipline, would find their academic level, or would actually be weeded out in a competition in which the prizes were larger and the number more extended of intellectually superior contestants.

[The financial status of the professor is next analyzed and the insufficiency of existing salaries pointed out.]

The occupants of non-clinical chairs, like those of the chairs in the arts departments, have little means of supplementing their salaries by outside work. Some of them do executive work which yields small additional emoluments; some write text-books which, if successful, bring in a modest amount of royalties; now and then a professor receives extra pay as a member of a federal, state or municipal commission of experts. There is no income, or very little, from consultation practice, for anatomists, physiologists and pathologists have but rarely had the clinical training necessary to make them expert diagnosticians and therapeutists; moreover a code of ethics has gradually developed which goes far to prevent such professors from engaging in the practice of medicine, except possibly a limited consultation work, even when their experience has been such as to make them equal to it. The feeling prevails that such outside work, so different from that of his regular activities, lessens a professor's opportunities for scholarly study by its encroachment on his time and energies and detracts from the dignity, simplicity and high-mindedness of the teacher's calling. . . .

That some great teachers and investigators are attracted to the non-clinical chairs despite the small material rewards and the heavy financial and social penalties pertaining to the positions, has been fully demonstrated; that some will continue so to be attracted we can be sure. Men who inordinately love gain and material advancement are not likely to work toward professorships; it is perhaps well that the professorial class is recruited elsewhere. The power of disinterested scientific creation and the passion for truth and research are seldom cerebrally compatible with the money-getting gift, the capacity to devote one's self to, and to keep the mind concentrated on, financial gain. The life of a professor is necessarily simple and frugal; his wife can make no pretense to the absurd and vulgar extravagance that Irving Batcheller facetiously and satirically describes as "keeping up with Lizzie." The career of a professor is often, however, one of profound influence and of steady happiness, of high honor and well-deserved respect, and these are rewards not likely to be regarded lightly among the more idealistic of our youth.

Still, it must frankly and anxiously be admitted that there are elements in the financial status of non-clinical professors which make us stand in pause when we think intently on the situation. No matter how keen the love of teaching, how hearty the satisfaction in solving scientific problems, a strong man can scarcely be expected to devote himself to a life of instruction and research when the remuneration is inadequate to the real needs of himself and his family during his period of activity, and to provision for his old age.

It is highly desirable that the compensation of professors should be a little above rather than below the line of comfort for the locality in which they live. It should be large enough to furnish the necessaries and conveniences of life, without superfluity, and should not be so small as to prevent a man from saving each year a part of his receipts, even though a smaller fraction of them than Bacon recommends. The struggle to live, financial worries, inability to educate the children of the family, too great personal hardship, and the social penalties of too small an income are sure more or less to inhibit a man in his work. . . .

Society ought not financially so to penalize the professorial class that the occupancy of chairs by the stronger personalities will be limited to bachelors, to childless men, to men enriched through the accidents of inheritance or marriage, or to married men who consent to doom their wives and children to the mitigated happiness which poverty affords.

Men of some sort there will naturally be who will seek salaried positions, no matter how low the salary, and, fortunately, the love of teaching, of study, and investigation will always secure a certain number of gifted men whose passion will make them work at the thing they like under any conditions. But if the fiscal arrangements of professorships were to be made in such a way that they attracted chiefly mediocre persons to whom a salaried position spells security, the higher interests of scholarship would suffer. Attention need scarcely be directed to the progressive declension of our public schools through precisely this enforced withdrawal of their abler men.

The interest in, and joy of, work, the desire of public service, the anxiety to do something well, the longing for the good opinion of one's colleagues, the obtaining of leisure to devote one's self to the finer interests of life—these must always be the great motives which lead men to become university professors. The material rewards are not, however, wholly insignificant. They certainly exert some influence. . . . In salaried establishments, it is not always possible to avoid the defects of "institutionalism"—bureaucratic officialdom, the tyrannies of a mandarinate, and oligarchic indolence; those interested in the organization of asylums for the insane have repeatedly lamented this fact.

[The author makes various suggestions for improving the financial status of professors.]

The education of public opinion to greater social recognition of the professorial class might help; it progresses rather slowly in a country in which "success" is largely, as yet, measured by income; those who have not learned how to get money and to keep it are too often, by the unthinking, indiscriminately classified, not quite, perhaps, as pariahs, cut off socially from hope, but still as futile persons, too innocent for "achievement" in a land of opportunities!

An especially pressing factor during recent years has been the gradual rise in the cost of living without any proportionate increase in the salaries of university professors. The average price of commodities has increased by 33 per cent. to 50 per cent., but the professor who was paid $2,000 or $5,000 before this rise took place is still compelled to live on the same amount. . . .

The whole situation should certainly be canvassed carefully and the means discovered for enhancing in various ways the social and pecuniary rewards of professors in the non-clinical branches of our medical schools.

POSITION OF AND TENDENCIES IN THE CLINICAL DEPARTMENTS

The policies followed in the clinical departments of the better university schools are far from uniform. There is, as yet, no unanimity of opinion as to the best way to improve these departments. All are agreed as to

certain fundamental points: the desirability (1) of more thorough practical teaching and (2) of an increase in scientific productivity. How best to move toward the practical realization of these ideals is a question.

A STATE OF FLUX

The clinical departments of the medical schools of the United States are on the eve, it would seem, of important reforms. To bring them about, radical changes may be necessary. Faculties will, doubtless, be led to experiment in various ways; only after trials through a considerable period shall we be able to decide on the arrangements and organization suitable for general adoption in the better schools. A state of flux, already evident in the clinical departments, is, therefore, likely to continue and to become even more pronounced during the next decade.

In medicine, which is, and must always be, the department of primacy in a medical school, and also in surgery the tendency to fill chairs by attracting able men from a distance has finally begun. It was formerly impossible on account of the absence of school-controlled hospitals. The medical faculties were compelled to accept as their clinical professors men who, developing locally, were the physicians to municipal or to privately endowed hospitals. In no other way could "clinical material" for the instruction of students be obtained. Now that universities are beginning to have their own hospitals, or to enter into arrangements with other hospitals through which their professors are assured directing places on the hospital staff, professors may be called from a distance, or be selected from the local profession, on account of their skill in diagnosis and therapy, their ability as teachers and their power as original investigators.

THE PRINCIPAL CLINICAL CHAIRS AND THE SPECIALTIES

The three principal clinical chairs in a medical school must always be those of medicine, surgery and obstetrics. A general training in each of these branches is absolutely essential in the education of every medical student.

In the specialties, there is time, in the brief period of the clinical curriculum, to teach the student only the most salient methods of diagnosis and treatment, those suited to the needs of the general practitioner.

[The proper relation of the specialties to the principal clinics is somewhat fully discussed. The importance of adequate special clinics for the postgraduate work is emphasized.]

THE HOSPITALS OF THE MEDICAL SCHOOLS AND THEIR MANAGEMENT

The most pressing need in the clinical departments of the medical schools of the United States, at present, is that of school-controlled hospitals in which the students may actively participate in the work of diagnosis and treatment and, under skilled direction, be held responsible therefor. In the hospitals, the conditions should permit of an adequate organization for the three great functions of a university clinic—practice, teaching, and research. These hospitals should be large enough to supply sufficient clinical material in internal medicine, surgery, obstetrics and in the principal specialties. The organization should ensure a large degree of departmental autonomy while providing for proper correlation of the activities of all the clinics.

It is only here and there in the United States that one finds belonging to a medical school (1) a hospital of sufficient size, equipped with teaching and working quarters, with wards situated in immediate contact with commodious clinical laboratories, (2) an organization according to which the professors of the clinical departments of the medical faculty are also the principal physicians and surgeons on the hospital staff, the whole control of the individual departments being in the hands of the respective professors. Until medical faculties obtain by endowment or agreement facilities of this sort, the clinical sciences must remain backward in their development.

[In the complete text the hospital situation is analyzed, the difficulties now existing pointed out, and measures for improvement advised.]

DEPARTMENTS OF INTERNAL MEDICINE

The functions of each of the clinical departments are manifold and complex. Let me refer to some of the activities of the branch about which I know most; namely, internal medicine. If one attempt to resolve the functional complexity of that branch into its component aspects one can distinguish, at once, at least four principal parts:

1. The practice of medicine in the public and private wards and in the out-patient department and the laboratories thereto pertaining, by which I mean the actual diagnosis and treatment of disease in the patients who enter the clinic.

2. The teaching in the wards, in the dispensaries and in the laboratories of (a) undergraduate medical students; (b) assistants and associates; (c) physicians taking postgraduate courses in the department.

3. The prosecution, by professors, assistants and postgraduate students, of original inquiries in internal medicine, the search for new methods of diagnosing and treating disease, the attempt to advance our knowledge of the subject beyond its present boundaries.

4. The administrative duties, including the admission, transfer and discharge of patients, interviews and correspondence with physicians who bring patients, and with the relatives and friends of the sick, the relations of the clinic to housekeeping and nursing, the maintenance of records and statistics, the arrangements for publications, the superintendence of budgets and expenditures, the making of appointments and promotions, the attendance on departmental and inter-departmental conferences, the formulation of curricula, the organization, equipment and running of the several clinical laboratories, the library, and the museum, the integration of departmental activities, the development of an *esprit de corps*, etc.

THE PRACTICE OF MEDICINE IN THE CLINIC

Turning now to a little closer examination of the work of the medical clinic of a modern school and hospital it will be found that the practice of medicine in the clinic itself is, separately considered, no small task. In order that the teachers and investigators in the clinic may be sure of getting what they need, or prefer, in their work, a large number of cases from which to select must be admitted to the hospital. The larger the clinical material available the better. The time may come when, in addition to the general reception wards of the stationary clinic, there will be special wards to which may be transferred the cases most suitable for teaching, on the one hand, and for investigation on the other. The larger reservoir for the reception of the cases previous to selection will always be necessary, for in the first place, until a patient has been fairly well studied, one cannot be sure how valuable he may be for illustration in teaching or for the suggestion of problems for original scientific investigation; in the second place, every great hospital must, on humanitarian grounds, take in

many cases which, at the time, may be of relatively little educational or scientific interest.

A large department for out-patients, a so-called "policlinic" or "ambulatorium," is also necessary for three reasons; first, on humanitarian grounds, to provide treatment for the poor who, though not well, are not so sick as to require admission to the wards of the hospital; again, as a feeder to the stationary clinic, to which can be sent the sicker patients, those exemplifying unusually well the pathological states under consideration at the time in the educational work in the wards, and those presenting obscure conditions, necessitating for diagnosis more elaborate studies than are feasible in the policlinic; and finally, for teaching purposes in the policlinic itself, for here material of a special kind becomes available for the teaching of students, including not only slightly ill patients suitable for the practical courses in physical diagnosis and other propedeutic studies, but also precisely the types of minor ailments which the young physician is most likely to meet when he starts out in practice.

[Dr. Barker describes in more detail the method by which the policlinic can be utilized for teaching, and also refers to the vexed problem of private wards in connection with university hospitals.]

The responsibilities of diagnosis and treatment of this vast collection of clinical material, public and private, stationary and ambulatory, are a grave burden which the clinical staff must bear. The mere technical procedures of the thorough examinations made and of the therapeutic measures carried out involve a large expenditure of time and energy. Students, house-officers, and senior assistants may well bear the brunt of this work, but, in addition, an associate professor, or in the larger institutions, preferably a full professor, may well devote the major part of his time and energies to it, leaving most of the teaching and experimental investigation to others. The philanthropic work of the hospital, as well as the reputation of the institution among physicians and among the laity, depends on the thoroughness and courtesy with which this work is done. Moreover, the teaching and investigative functions of the clinic can be properly developed by those who are devoted especially to them only after this fundamental function of diagnosis and treatment has been fully provided for.

[Here the author calls attention to the great differences in the functions of men who work in clinics and those who work wholly in laboratories.]

The application of the principles of "scientific management" to the details of the work in the clinic promises improvements. If every element in the work of the clinic, from out-patient department to private ward, were subjected to searching inquiry, much waste of time, waste of energy and waste of material could be eliminated. At present there is little uniformity in the technic of clinical examinations and the personal element enters far too greatly. It is highly desirable that experts shall decide on the one best method to use in each instance, that these best methods shall be adopted as standards, the efficiency of all the workers being gradually brought up to these standards by careful instruction, and the organization made such that the plans will be self-perpetuating. This task is far easier to talk about than to accomplish, but it should be undertaken.[1] Modern commerce is developing systems of efficiency beside which the management of clinics cuts a sorry figure. We need a "commercialization of medicine" in the good sense and must see to it that the term "medicalization of business" is not coined as a byword of reproach!

1. Taylor, F. W.: Scientific Management, N. Y. 1911; Gantt, H. L.: System, February, 1911; Cooke, M. L.: Bulletin of Carnegie Foundation, 1910.

THE TEACHING OF INTERNAL MEDICINE

In the performance of the second great function of a medical clinic, that of teaching in the wards, in the dispensaries and in the clinical laboratories, a fairly large staff, a well-thought-out plan and the devotion of much time and energy are essential. The amount of teaching in a department of internal medicine is, and should be, greater than in any other department of a medical school. It makes up a large proportion of all the work of the third and fourth years, and from now on is likely to include also a part of that of the second year of the undergraduate course.

Since the graded medical course was inaugurated by Northwestern University many years ago, American clinicians have gradually arranged a sequence of studies in the medical clinic which permits of a methodical advance in the instruction. The student from the beginning of his clinical studies is made regularly and purposefully to climb a ladder which connects the fundamental training of the non-clinical departments with the professional occupation which he is to take up after graduation. Instead of the didactic and merely demonstrative teaching which formerly prevailed, a thorough practical training in clinical work is now required. After a general introduction to clinical methods and aims at the end of his second year, the student is, in his third year, instructed in the principles and art of physical diagnosis (inspection, palpation, percussion and auscultation), and he is taught, in the systematic practical course given in the clinical laboratory, how to make examinations of the sputum, urine, stomach contents, feces, blood and the various body fluids. In the third year, too, he learns the method of taking clinical histories and of keeping protocols, hears a certain number of general didactic lectures, attends amphitheater clinics which stimulate his interest, studies a good text-book, and is tested as to his progress by carefully conducted recitations. In the latter part of the third year he may profitably engage in the actual history-taking, physical examination and therapy of ambulatory patients in the policlinic.

Important as this propedeutic work is, it is overshadowed in benefits conferred by the medical work of the fourth year, when the undergraduate student is required actually to do an important part of the work in the stationary clinic. Here, as a clinical clerk, he has a certain number of beds assigned to him and is permitted to regard the patients occupying them as his patients, for whose study and care he is personally, in large degree, responsible.

[In the following section, which is here omitted for lack of space, the importance of teaching by the method of clinical-clerkships, introduced into this country by Dr. Osler, is entered on.]

Students and staff thus work together in the medical clinic as a harmonious group. The cases under examination are compared with similar cases in the literature. The spirit of thorough investigation is cultivated; each worker is encouraged to ask himself how the particular cases immediately in his care can be more completely analyzed and what problems they present suggestive of experimental or statistical inquiry. The treatment insti-

tuted can be carefully observed, for the work is concentrated, the students practically living in the medical wards for several months at a time; any results attributable to therapy can be observed and recorded. If a patient gets well the students are urged to follow up his subsequent history; if he dies they attend the autopsy in the pathologic laboratory and compare the anatomic findings with the clinical inferences which have been drawn during life.

In all this medical work, in both the third and the fourth years, it is essential that the students be divided into small groups and that each group be directly supervised by some member of the clinical staff. The immediate hourly supervision will, of necessity, devolve on the younger men on the staff, but a heavy burden also falls on the senior members of the department who must, themselves, keep in intimate touch with the students and junior staff—controlling, criticizing, reviewing, suggesting, encouraging. At least one full professor and two associate professors, whose function shall be predominantly teaching, are needed to plan and to conduct this work; in larger clinics it would be of advantage to have two full professors assigned to this function. In some of the schools, the teaching professors will also be the authors and revisers of text-books of medical practice.

[Continuing the description of the teaching in the clinic, the article deals with (1) the instruction given to the junior men on the staff, and (2) postgraduate courses in internal medicine.]

DISCOVERY IN INTERNAL MEDICINE

The third great function of the clinic of internal medicine is that of original investigation. It is a fortunate feature of clinical work, one doubtless that has had much to do with that steady progress in knowledge which throughout time the clinics have made, that even the routine work in a clinic is largely work of research. Each new patient is a problem for investigation; the clinician applies the methods he has learned and tries to solve it. The essentially inquisitive nature of the everyday work of the clinician has to be personally known to be fully appreciated. In addition to the ordinary routine of clinical work, physicians are constantly trying out new methods of examination and treatment that have been devised and recommended; this work, carefully done, the observation being accurately recorded and analyzed, affords material for statistical inquiry, the results of which are often of high importance to the profession. When a new method of determining clinically the size of the heart has been proposed, or an early diagnostic test for typhoid fever or for syphilis or for carcinoma of the stomach suggested, long experiential proving in the clinics must decide as to its value before it is accepted for general routine. A great clinic, scientifically controlled, can thus continually advance knowledge and help on the practical work of the profession.

It is, naturally, not the function of the clinic to do work in abstract anatomy, physiology or pathology. The aim and purpose of the clinic is on the contrary to continue the applications already made, and to make new applications, of the facts of anatomy, physiology, pathology, chemistry, etc., to the solution of problems in diagnosis and therapy suggested by patients who come to the clinic for help. Unless clinical men fully realize this point, unless they have a full consciousness of precisely what the clinic is for, they may be led astray by those who feel that "applied science" is very different from "science."[2] Clinicians are sure, now and again, to make certain contributions to pure physiology or pathology when trying to solve their own problems in diagnosis and therapy. They will be glad when their work so contributes, but this should not be the main aim and purpose of that work; as soon as a man in the clinic finds it to be so, it is time that he left the clinic and transplanted himself to a laboratory of physiology or pathology. Clinicians must jealously guard opinion in this matter; otherwise their sciences cannot progress.

[A section omitted here emphasizes the significance of an atmosphere of original research for students and staff.]

In the United States, the emphasis has been laid rather on the teaching of students; clinical research has been, until recently, less cultivated. This may explain the higher state of clinical science in Germany, on the one hand, and the better physicians trained by the good schools in the United States on the other. Germany ought to reorganize its clinical teaching so as to make better doctors[3]; in the United States we should set about increasing the scientific productivity of the clinics. . . .

In order that clinical research may make more rapid advance, and the sciences of diagnosis and therapy be furthered, the experimental method should be more extensively employed. Owing to the peculiar conditions which have prevailed in the clinics up to now, only a few men, either in Germany or the United States, have had the time, interest, training and independent income which have permitted them to do extensive original work by experimental methods in laboratories directly attached to the clinics. Recently, however, more of this work has been done. It has been very welcome, and the time has come when it would seem desirable to make this kind of research more systematic and purposeful, less casual and accidental.

[Dr. Barker lays stress on the establishment, in addition to teaching and diagnostic laboratories of several special research laboratories in the medical clinic (biochemical, serologic, physiologic and psychopathologic), directed by well-paid scientific men.]

It would be short-sighted of internal medicine to neglect these powerful engines of exploration and enrichment. The other departments of applied science have set us the example. Technology has demonstrated the efficacy of paid research work for the promotion of the industrial arts (metallurgy, brewing, electrical engineering, sugar refining, food preservation, the manufacture of arms and ammunition, etc.). It would be a distinct advantage if at least one liberally endowed full professorship were provided in the clinic of internal medicine, in which a man of original ideas, thoroughly trained in methods of research, could, undistracted by administrative work, by private or hospital practice, or by undergraduate teaching, devote his whole time and energies to it. A mind full of heuristic hypotheses, a curiosity which compels the accurate testing of them, a body inured to intense and confining work, the privilege of

2. A mathematician sometimes feels that his work is more scientific than the work of the chemist or physicist; the latter, in turn, is too prone to regard the biologist or physiologist as an unfortunate worker in applied science, and to speak with some contempt of the efforts with complex and mixed substances made by the biologic chemist, or the immunologist; the physiologist and the pathologist again only too often fail to attribute scientific value to the efforts at application of the facts of their subjects made by clinicians. There will always be, I fear, this misunderstanding of the applied sciences by the sciences basal to them.

3. An effort in this direction, recently made in Germany, may be seen in the "hospital year" now required at the end of the medical course there. It appears to correspond to our hospital internship, made compulsory.

continuous, uninterrupted application to laboratory studies, a guarantee of financial independence, liberal support in the form of equipment, facilities for experimentation, assistants and mechanical aids, and the entire sympathy and cooperation of those who attend to the major part of the practice and the teaching of undergraduates in the clinic would be necessary to make the venture fruitful. Assume the existence of such conditions in our departments of internal medicine, and find for the research professorships men of the type of Louis Pasteur, Robert Koch, Paul Ehrlich, or Simon Flexner —what dare we not expect in the way of extension of diagnostic recognitions and of means of cure?

And what an opportunity such an arrangement would offer for postgraduate study! A few advanced scholars, desiring to widen the science of internal medicine, could cooperate with such a research-professor in the "master work-shop," and, according to their ability, experience the wonderful joy of creative work. One who has once been permitted so to participate will never forget it. Many regard this last and highest phase of personal education as the acme of their inner experience.[4]

Despite the unfavorable conditions now existing in the clinical departments, strong men have been attracted to them. All things considered, patients are being very well cared for, good physicians are being trained, a very fair amount of original work has been produced. The bibliographic output, including text-books, handbooks and publications of original research, compares favorably with that of any one of the laboratory subjects. As to foreign recognition, it has been fully as great for the clinical chairs, if not greater, than for the non-clinical departments. Many foreign clinicians have visited American clinics and most of the foreign students who have come to this country to work have entered clinical rather than non-clinical departments. Several clinical text-books have been and are being translated into other languages.

THE MOVEMENTS TOWARD REFORM

The tedium of this long description of the functions of a medical clinic would scarcely be justifiable were it not for my desire clearly to establish a fact of importance, namely, the growth of the functions of the clinic to a size and complexity no longer compatible with the form of its present organization.

Hitherto there has been only one professor at the head of a clinical branch, and he has been supposed to engage in, care for and control all these varying activities and, in addition, to make the major part of his income in practice outside the hospital, only a few institutions, thus far, having been able to pay salaries which would defray even a portion of the cost of the clinician's living. Surely the superhuman has been expected!

We have now briefly to consider how the clinics can best be organized to meet modern requirements, and I shall again refer chiefly to the medical clinic, assuming that a plan which will suit its exigencies may, with certain modifications, be applicable to the other clinics.

[Methods of reorganization and reform, based on a functional division of labor, are next suggested.]

Those who devote themselves chiefly to the care of patients in the clinic need not be men who do a great deal of teaching and investigation. Those who are mainly responsible for the teaching in the undergraduate school should not be burdened with the care of too many patients and would of necessity have to limit the time given to investigation. Those, in turn, who give their time and energies almost wholly to research should be protected, as far as possible, from the teaching of undergraduate medicine and from the care of practice and administration.

Here, then, we have in mind a clean-cut conception of an ideal of organization toward which we may strive. What is now a single professorship could be replaced by a cooperative committee of professors in charge of a large and differential staff.

[The section omitted here deals with the "headship" of the department and the cooperation of the staff.]

In an address delivered some years ago, entitled "Medicine and the Universities,"[5] I made some suggestions regarding the clinical branches; even then, though I was engaged entirely in laboratory work, it seemed to me that the clinics were under-manned and that the work in them was insufficiently differentiated. In that address it was intimated that the time might come when, in the clinical branches, we should have at least two kinds of professors: (1) Professors on a so-called "university basis," paid salaries large enough to enable them to devote their whole time and energy to teaching or investigation, without engaging in private practice; and (2) professors who give a part of their time to the care of patients in the hospital, to teaching or to investigation, and who, though paid smaller salaries, obtain their income chiefly from the fees of private patients, preferably from consultative or operative work. The ideas there set forth, in the main, still hold good, though it is doubtful if they can be applied in precisely the manner I then suggested. Though the clinic then seemed complex, I know, to-day, even more of its intricacies and difficulties, and the problem looks less simple in solution at close range than it did at a distance.

Were a new medical school to be started, with liberal endowment, it would be an interesting experiment to try an organization in which a functional division of labor, such as I have outlined, is provided for and in which some of the professors, especially those devoting themselves almost entirely to research, will be paid sufficient salaries to permit them to escape from practice.

It has hitherto been taken for granted that the professor of medicine in the medical school will engage in medical practice and that the professor of surgery will have his private patients, each reaping the financial rewards attending on such work. The prominence of such men and their unusual training and opportunities have made them, as a rule, much-sought consultants rather than general practitioners, though many of them naturally began with general private practice in their respective branches, and, as their work grew, limited it, later, to consultative or operative practice. Only rarely have the occupants of clinical chairs been paid living salaries.

[An omitted paragraph comments on the public demands made on clinical professors and the question of the substitution of salaried public medical service for private enterprise.]

In our reorganized medical schools it does not seem to me probable that it will be desirable soon, if ever, to have all the men of the faculty composed of non-practitioners. It would seem distinctly advantageous to have at least some of the teachers of undergraduates and some of the men who care for the patients in the

4. Cf. Ostwald, W.: Die Umschau, January, 1911.

5. American Medicine, Phila., 1904.

hospital also engaged in private practice, at least in consultative or in operative work.

In all attempts at reconstruction our efforts should, at first, be tentative. It would be a mistake to start with any cut-and-finished garment that we should ask the medical schools immediately to don. Though having the essentials of our ideals in mind, the proper method of attaining to them and the proper expedients would have to be slowly established. At an early stage of reform, anything like extreme measures should be sedulously avoided. In making profound changes the process of transition must not be flatly ignored. The ideal clinic can scarcely be attained by proclamation. The obstacles in the way of progress must be carefully measured and we must keep in mind the cardinal fact that "all true development and progress are out of and because of what has gone before."

It is among the inconveniences attending all important reforms that the disciple overstates the teacher, exaggerates some features of his doctrine and is oblivious to, or insufficiently appreciative of, others. There is always danger of confusing novelty with originality and alteration with progress. Because we desire research is no reason for doing away with teaching and practice in the clinic. Nor would, in my opinion, the limitation of every professor in a university to the material rewards of an insufficiently salaried position prove a panacea or a magic "open sesame" to the medical millennium.

Some enthusiasts urge the summary dismissal of the clinical professors now active and the substitution of non-practicing men. Even if this were advantageous for all the chairs, as some erroneously think, it would be difficult to apply such an organization abruptly in the schools already established. Men who now occupy the clinical chairs and who have of necessity ordered their lives for the double function of professorships, on the one hand, and of consultative or operative work, on the other, have become so involved in obligations that they could not suddenly change to a salaried basis without great hardship to themselves and their families, and loud complaints from the public.

[The cost of living of the clinical professor is the topic of an omitted section.]

Hitherto there have been no endowed clinical professorships and should they be established, men would have to be trained especially for them. For this reason alone, the change could not be promptly brought about; and besides, any extreme and harsh measure like compulsory expropriation of the chairs might do damage inasmuch as anything that makes the tenure of university professorships insecure injures the universities.

It must be kept definitely in mind that the majority of the present incumbents of clinical chairs hold them in good faith; that they do their best in the conditions that now exist; that they, as much as any group, desire to see the clinical subjects advanced, to have the patients better cared for, to improve the teaching, and to augment the scientific output. The rightfulness of the kind of work the clinical men are doing has always been taken for granted. It may be a mistake for our medical schools to continue to have all clinical professorships as they have been; it may become educationally advantageous radically to alter the vast tradition of relationships in which clinical teachers now live. If so, the change can doubtless be brought about in an orderly and reasonable manner, and no ingratitude should be shown to those who up to now have tried to hold the torch aloft under unfavorable conditions. Above all, all honest, earnest, hard-working men should be protected from the zeal and overstatements of headlong advocates who insinuate the absence of ideals among clinical men, or talk of graft, rascality, commercialism and the exploitation of the clinical chairs for private profit.

The reconstruction in the clinical departments, when it is undertaken, ought, therefore, to be a sane and gradual process, a process of careful readjustment to changing conditions, going only as fast as men can be suitably trained and academic opinion correspondingly educated. Carried on in such a way, the reforms will be welcomed and hastened by every progressive, right-thinking clinician. Our better physicians and surgeons are broad-minded men; they are by no means devoid of the quality of self-abnegation nor of the spirit of public service; on the contrary, they are entirely capable of assuming their fair share of renunciations when conditions demand them, and of making personal sacrifices for the general good. Convince such men of the evil which exists and they will be no antagonists to the forces of reform, but, on the contrary, willing leaders of those who try to root the evil out.

After provision has been made for school-controlled hospitals, in which students may live and work, we must find places for the different kinds of clinical men —practitioners, teachers, investigators. There is room for all three types, and all three kinds of work are desirable and honorable. We have a homely saw to the effect that square pegs should not be put into round holes, an adage which finds its more polished equivalent in the Greek "Character is Fate." In every branch in a medical school students should come into contact with the stimulating investigator who is ever pushing forward the boundaries of knowledge; he should learn the main facts that have already been discovered from a teacher who knows how to collect them and to transmit them to others, and he should have the opportunity of watching the example of practitioners who come into contact with all sorts of patients and all sorts of doctors, who are acquainted with the great variety of clinical puzzles which are presented to the consultant for solution and who learn the virtues and defects of the men now engaged in medical practice in different parts of the country.

After giving these matters much consideration, there is one suggestion that I should like to offer as an immediate means of magnifying the scientific productivity of our clinics and of training men for leadership in them. Provide endowment for the maintenance, in each clinic, of a group of young scientists of proved ability and capacity for development, and relieve these men of most of the routine work of teaching and the care of patients, that they may have leisure for investigative work in the wards and clinical laboratories. A suggested scale of remuneration for such men might be an initial salary of $800 or $1,000 per year and living in the hospital, with a yearly increase of $200 or more for the next ten years. These men, so kept at work during their most productive years—usually between the ages of 25 and 45—would rapidly increase the scientific output of the clinics, and would speedily form a group of scientific men in the clinical branches from among whom, later on, professors in medical schools and investigators in research institutes could satisfactorily be chosen. Appointed to professorships, men so selected would not need to be hedged about by too great restrictions; their training in scientific methods and ideals would have been such that they could not quickly be spoiled. There should then be no attempt to interfere with the full play of their

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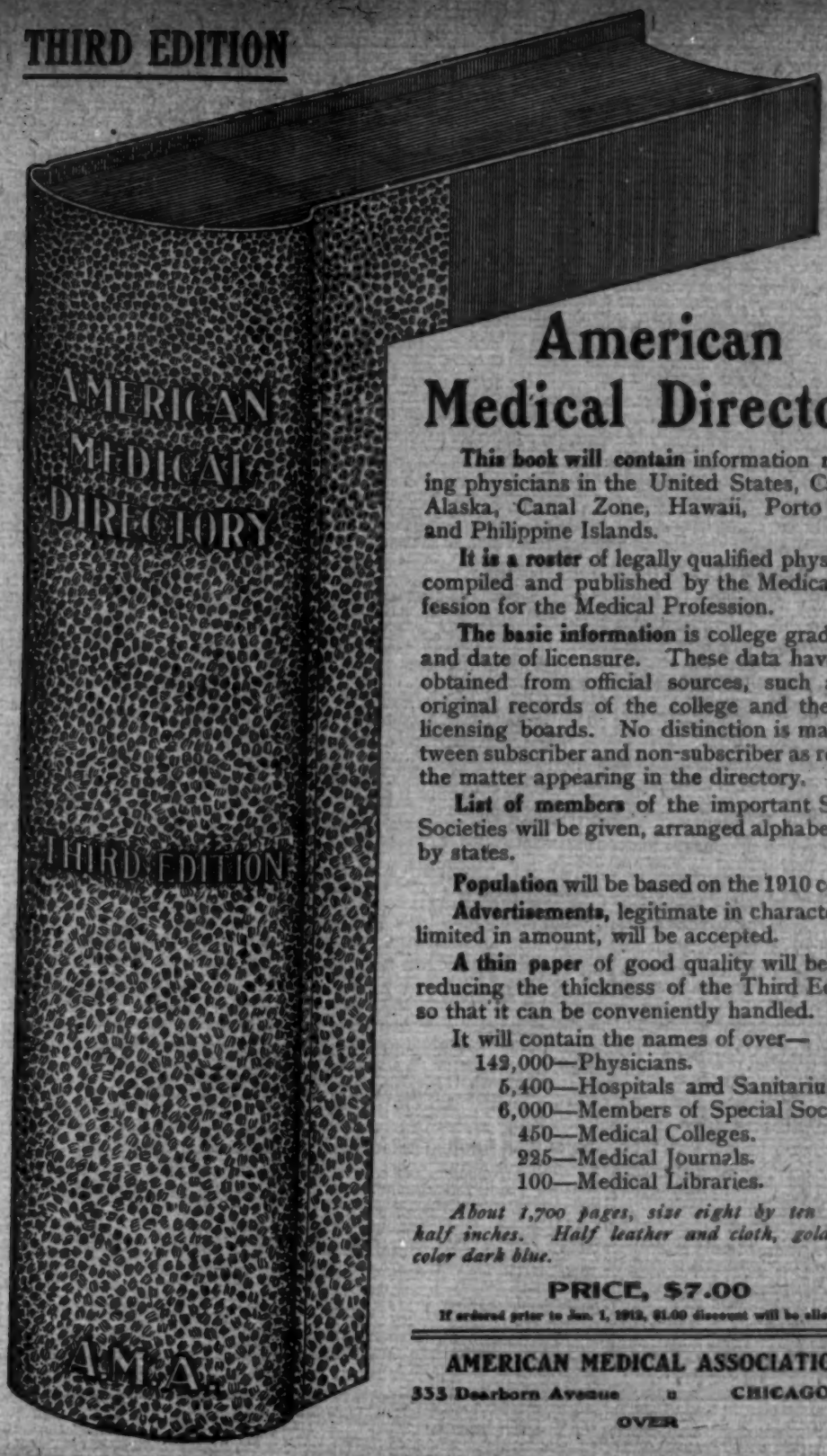

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individualities; their positions should be made as unhampered as possible; they would of themselves chip away "the spendthrift liberties that waste liberty," and devotedly give their time and energies to the advancement of the subjects they represented. Their appointments as professors might automatically cease at the end of a given term of years, or when a certain age limit had been reached.

This occasion does not, of course, permit of any full discussion of the points I have raised. Perhaps I have said enough to call some of the interests to mind and to assure you that the men connected with the medical schools in the United States, like those in Canada, are doing all they can to elevate standards and to improve conditions in that noblest of all professions—medicine.

1035 N. Calvert Street.

ANATOMIC CONDITIONS BEARING ON THE RELATION BETWEEN DISEASES OF THE EYE AND DISEASES OF ACCESSORY SINUSES *

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The eye and the nasal accessory sinuses are intimately related; in fact, the bony walls of the orbit are formed chiefly by the walls of the sinuses. The upper wall is formed largely by the floor of the frontal sinus, while the inner wall is formed principally by the lateral wall of the ethmoid cells, and the floor of the orbit by the roof of the maxillary sinus.

The bony walls are very thin, varying from 1 to 12 mm. in thickness. Aside from being at times of tissue-paper thinness, they may be defective; that is, they may have dehiscences. These dehiscences allow the mucous membrane of the sinuses to come in direct contact with the orbital tissues or the optic nerve. The dehiscences may be due to senile atrophy or to formative anomalies. Zuckerkandel reports fourteen and Onodi eighteen cases of congenital dehiscences of the paper plate of the ethmoid. These openings varied from 4 to 28 mm. in the sagittal and from 4 to 8 mm. in the vertical diameter. Merlin reports one case in which a dehiscence of the paper plate of the ethmoid connected the ethmoid cells with the orbit, frontal, and sphenoid sinuses. Onodi also observed three cases in which the frontal sinus communicated directly with the ethmoid cells and orbital cavity. Zuckerkandel reports four cases in which dehiscences of the sphenoid sinuses were connected by congenital dehiscences of the lateral wall of the ethmoid sinus; all four cases showed dehiscences of the orbital wall of the sphenoid.

In addition to those already mentioned, dehiscences of the frontal sinus occur frequently in the form of small openings, which are in part circular and part lineal. These little openings, Helly designates as "venenlocher." Kuhnt has shown that two of these small vessel openings, one of which is just at the inner orbital angle, and the other just behind the incisura orbitalis, are the usual routes for the passage of infectious material from the frontal sinus to the orbital cavity; another point of predilection in cases in which the frontal sinuses are large is at the junction of the middle and lateral portion of the orbital plate of the frontal. Onodi lays special stress on a defect which occurs in the ethmoid canal. The canal extends from the anterior ethmoidal foramen on the wall of an orbital cell or frontal sinus, to the anterior cerebral fossa. In this canal lie the anterior ethmoidal artery vein and nerve. He has shown that this canal at times consists only of a groove or semi-canal, with its vessels and nerves covered only by the mucous membrane of the sinus or orbital cell, bringing the mucous membrane in direct contact with the orbital tissues at one end and the dura mater at the other. Since a diseased process in the frontal sinus can easily extend by direct continuity of tissue to the orbit or dura, the importance of this canal at once becomes apparent.

Merlin and Zuckerkandel also report having observed dehiscences in the inferior orbital wall, thus bringing the periorbita and periosteum of the maxillary sinus in direct contact. The dehiscences in the paper plate of the ethmoid explain the occurrence of orbital emphysema, which results from sneezing or violently "blowing the nose" in otherwise normal individuals.

If these dehiscences are present when there is an existing suppuration, very little resistance is offered in preventing an extension into the orbit, as the periosteum of the sinus walls, as well as that of the orbital cavity, is not only very thin, but very poorly nourished.

The relation of the venous circulation of the sinuses to that of the orbit is most important. The anterior facial vein has its origin in the angular vein and anastomosis with the nasofrontal vein. The superior ophthalmic vein, commencing anteriorly in this nasofrontal vein, enters the orbit and passes outward above the optic nerve through the orbital fissure into the cavernous sinus. During its course through the orbit it receives, according to Birsch-Hirschfeld: (1) a vein from the lacrimal gland, (2) a vein from the frontal sinus, (3) a vein from the antrum of Highmore, (4) a communication from the inferior ophthalmic, (5) a communicating vein with the vein that anastomosis the angular with the cavernous sinus, (6) anterior and posterior ethmoidal veins, (7) muscle veins, (8) lacrimal vein, (9) central vein of the retina.

Through the ethmoidal veins and the nasofrontal vein, and the above mentioned branches of the superior ophthalmic, which communicate with the veins of the frontal and maxillary sinus, a thrombophlebitis may readily extend from the sinuses to the orbit or dura. Kuhnt reports three cases of embolism of the central vein of the retina from maxillary sinus empyema. According to Onodi, the venous plexus of the maxillary sinus bears a relation to a branch which bores its way through the sphenoid sinus wall. The veins of the sphenoid sinus may stand in direct relation to the ophthalmic plexus and cavernous sinus.

The arterial connection between the orbit and the sinuses is of much less importance. The posterior ethmoid is a branch of the ophthalmic and ramifies in the ethmoid cells. The anterior ethmoidal, also a branch, in its passage through the ethmoidal canal or semi canal, as before mentioned, may in connection with its vein, be of considerable importance as a route of infection from the frontal sinus to the orbit.

There seems to be very little exact knowledge regarding the lymphatics of the orbit. The presence of lymphatic vessels in the orbit is questioned by some. Birsch-Hirschfeld was able to demonstrate the presence of lymphatic spaces with well defined endothelial linings, in the adipose tissue, between the muscles, in the lacrimal gland, in the region of the optic nerve and in the periosteum. The larger spaces were in the neighborhood of

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the larger vessels. He was, however, unable to demonstrate the direction of the lymph flow. Regarding the relation of the lymphatics of the orbit to the lymphatics of the nose, Birsch-Hirschfeld quotes Herman, who states that the lymphatics of the nose, with those of the face and the nasolacrimal duct, are in communication with those of the orbit. The post-mortem findings in the cases reported by Pagensteker and Hajek, in which meningitis resulted from frontal and ethmoidal suppurations, no bone involvement was found, from which these authors concluded that the infection may have traveled by way of the lymphatics. It, therefore, seems probable that the orbit could likewise become infected through the lymphatic channels in connection with diseases of the nose and accessory sinuses.

The sphenoid cavity does not, as a rule, come in relation with the orbit, but its thin and often defective walls may be in relation above with the optic chiasm, sinus intercavernosi, the optic nerves, and laterally on each side with the cavernous sinuses, the communicating vein between the superior and inferior ophthalmic veins, and at times the central vein of the retina.

The proximity of the optic nerve to the sphenoid sinus and posterior ethmoid cells has been carefully worked out by a number of authors, viz., Berger, Tyrman, Hajek, Killian, Avellis, Onodi, Loeb and others. Their anatomic studies have shown that there are a great many variations in the relation between the sphenoid, the posterior ethmoid cells, orbit and optic nerve. Onodi was the first to show that the last posterior ethmoid cell is at times in relation to the optic nerve. Up to that time the contiguity to the sphenoid sinus alone was mentioned. Berger and Tyrman first called attention to the fact that the sphenoid sinus is not always in relation to the optic nerve. The bone between the sinus and the nerve may reach a thickness of 12 mm. This explains why in an extensive disease of the sinus, the nerve may not be involved. In Onodi's studies of the various relations existing between the sphenoid and posterior ethmoid and the optic nerve, he found, among others, the following of importance: the left posterior ethmoid cell may constitute the medial wall of the right optic canal. The right posterior ethmoid may constitute the inferior wall of the optic canal on both sides, and the wall of the entire optic sulcus. The left sphenoid sinus may constitute the inferior wall of the right optic canal. The right sphenoid sinus may border medially only on the left optic nerve. The left sphenoid sinus may constitute the inferior wall of the right optic canal and the wall of the right third and middle third of the optic sulcus. The left sphenoid sinus may constitute the inferior and medial wall of the optic canal on both sides and the wall of the entire optic sulcus. The left sphenoid sinus may also constitute the inferior and medial wall of the left optic canal and the inferior wall of the right optic canal, also the wall of the entire optic sulcus.

Onodi has further shown that when the posterior ethmoid cell is in relation with the optic nerve, the bony wall between them is usually very thin. He also illustrates two cases in his atlas which are highly instructive. In one the optic canal comes through a posterior ethmoid cell for a distance of 12 mm. In the other, the optic canal lies free in the sphenoid for a distance of 10 mm. The intimate relation of the optic nerve and the ethmoid and sphenoid sinuses not only shows the great liability to blindness in diseased conditions of these cavities, but also the danger of wounding the nerve in operative procedures in these cavities. Loeb lays stress on the position of the opening of the sphenoid cavity. He points out that the higher the opening of the sphenoid, the closer the stagnant pus comes in contact with the nerve, therefore the increased likelihood of nerve involvement. He has shown that in some instances the opening of the sphenoid cavity is on a level with, or even above the optic nerve.

The anterior ethmoid cells are not, as a rule, in relation to the optic nerve, but may be when they are large enough to replace a posterior ethmoid cell.

The frontal sinus may be in relation with the optic nerve, in those cases where the cavity representing the ethmoid merges with the frontal and the wall of their common cavity constitutes the medial wall of the optic canal, as occurred in a case described by Onodi.

These various relations which the optic nerve may bear to the nasal accessory sinuses explains the occurrence of involvement of the nerve on both sides in diseases of the sinus on one side, or even involvement of the nerve on the opposite side.

The fifth cranial nerve in its passage along the outer wall of the sphenoid sinus may be involved in sphenoid disease. Thus Posey and Ellinger have reported corneal affections as a result of the fifth nerve involvement, due to sphenoid disease. The sixth nerve, in its passage through a groove in the sphenoid, is often separated from the sphenoid sinus by a very thin wall. This nerve supplies the external rectus. A paralysis of the muscle is frequently concomitant with an acute rhinitis. Holmes maintains that the paresis cannot be explained, except as a result of disease of the sphenoid.

EYE COMPLICATIONS ARISING FROM DISEASES OF THE NASAL ACCESSORY SINUSES *

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In presenting the subject of eye complications resulting from diseases of the nasal accessory cavities, there is much that has been said so often that it seems unnecessary to repeat it. It will be my purpose briefly to call attention to a few points which are generally recognized, and to emphasize certain obscure relations in the hope that we may be encouraged to make more careful observations and draw more accurate conclusions.

The relation between purulent accessory sinus disease and orbital cellulitis has long been recognized. As in mastoid disease we may have extensions from the mastoid through the bony walls by necrosis of bone, by the venous channels, by the lymphatics, and apparently by migration of the infection from one part to another contiguous part, so in purulent disease of the nasal cavities we may have extension to the orbit by any of the processes mentioned. Orbital cellulitis is characterized by pain, swelling, usually proptosis, redness and elevation of temperature. The symptoms vary according to the location and virulency of the infection. A cellulitis may subside without abscess formation, or an abscess may form near the orbital wall, and break into and drain through the accessory cavity from which the infection came. In the severer types there is severe pain, enormous swelling, chemosis of the conjunctiva, and sometimes cerebral symptoms such as headache, drowsiness, vomiting and disturbances of the pulse and respiration.

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The sight is impaired by displacement of the eye-ball and by stretching of the optic nerve. It may be lost entirely by involvement of the optic nerve. Detachment of the retina and panophthalmitis are occasional results.

The additional causes of orbital cellulitis, as given by Fuchs, are injuries, erysipelas, metastases in pyemia, typhus, scarlet fever, small-pox and purulent meningitis. Of all the causes, accessory sinus disease is undoubtedly the most common. The difficulty in getting at the cause of this trouble, as of many other lesions about the eye, is that those who see most of these cases are not able to correctly diagnose obscure nasal conditions. The diagnosis of orbital cellulitis is usually easy, but to determine whether of nasal origin or whether due to something else is sometimes difficult even for those accustomed to nose work. Transillumination of the frontal and maxillary sinuses, while not giving positive information, is of value. Inspection of the nasal chambers after shrinking the soft parts with cocain and some suprarenal product will frequently show discharge coming from or lying in the neighborhood of the ostia. The probe should be used, and in doubtful cases the diagnosis can be cleared up by direct exploration of the cavities.

TREATMENT

The subject of treatment naturally falls under four heads:

1. Preventive treatment by attention to pre-existing nasal conditions.
2. Nasal treatment during the attack.
3. Palliative treatment.
4. Surgical treatment.

The first two divisions—the preventive and the nasal treatment during the attack—apply to all diseases of the eye of nasal origin, but the discussion of them does not properly belong to this paper. The palliative treatment consists of anodynes when necessary, hot applications to the eye and general treatment such as is applicable to all acute inflammatory conditions. The detection of pus in the orbit is a positive indication for incision, but without fluctuation it is proper to make one or more deep incisions into the orbit whenever the swelling or the proptosis seems to have reached the danger-point. The pressure is thus relieved and the abscess can sometimes be found and drained when the external indications of pus are lacking. The position and direction of the eye-ball may help to locate the abscess. An abscess in the upper part crowds the globe forward and downward. Induration in the upper part of the orbit is likely to direct the eye downward, while an abscess, by pressure on the superior rectus muscle, may direct the eye upward. The same rule applies to abscess in other parts of the orbit.

Diseases of the lacrimal apparatus may result from extension of pathogenic microorganisms from the nasal cavity or from closure of the nasolacrimal duct by swelling of the soft tissue in the inferior meatus. The percentage of cases of lacrimal disease of nasal origin has been variously estimated, some believing that fully 50 per cent. are due to pathologic conditions in the nose. Others do not consider the nose as a possible etiologic factor. It is impossible to determine accurately the percentage since the patients are usually not seen until the conditions are well developed and then the pathology found about the nasal opening of the lacrimal duct may be the result rather than the cause of lacrimal disease. It seems sufficient for the purpose of this paper to say that in all cases of dacryocystitis, lacrimal abscess and epiphora, the nose, especially the accessory cavities, as a possible cause should be thoroughly investigated.

Diseases of the conjunctival sac and cornea of nasal origin may be due to invasion of microorganisms coming up through the lacrimal apparatus. Gradle believed the percentage of these cases to be very large. The reflex relationship existing between the conjunctiva and the nose can be easily demonstrated by irritating the tissues about the front end of the middle turbinate with a little cotton on an applicator. The conjunctiva becomes injected and in most cases lacrimation is increased. The same change is frequently seen after mechanical irritation of the accessory cavities although it is not so easy to demonstrate experimentally. In one of my patients, while the right sphenoid sinus was being explored, the conjunctiva of the right eye became congested, the redness, with some impairment of vision, lasting several days. It disappeared, however, without treatment, but occurred again several times after nasal manipulation. The etiologic relation existing between a conjunctival disturbance in a given case and disease of an accessory cavity is not easy to demonstrate positively. There is always the possibility of two or more simultaneous disturbances with different and independent causes, but from the way in which some of the conjunctival diseases clear up after treatment of an associated nasal accessory sinus disease the etiologic relation can be fairly assumed.

Muscular imbalance is believed by some to be very largely of nasal origin. Considering the thinness of the wall between the attachment of the rectus muscles and the sphenoid cavity and ethmoid cells, it does not require any great stretch of imagination to believe that disease of these cavities may impair the function of the muscles. The result of treatment of accessory sinus disease in the presence of muscular imbalance further goes to show that there is an intimate relation between the two conditions.

The muscular defect most commonly due to ethmoid disease is esophoria for distant vision with exophoria for close vision. The inflammation about the insertion of the internal rectus at the optic foramen seems to produce some contraction of the muscle thus drawing the eye nasalward from its normal position for distant vision, while the contractility is impaired, thus preventing the eye from turning inward sufficiently for normal, easy, binocular vision for close objects. It seems not improbable that the cases of headache caused by use of the eyes for close work, which have not been relieved by glasses and have been relieved by treatment of diseased ethmoid cells, are really cases of muscular asthenopia.

The pathologic relation between the accessory cavities and intra-ocular disease is not well understood. That such a relation exists is even doubted by some. The cases of iritis, choroiditis and retinitis associated with suppurative disease of the cavities are too frequent for the relation to be considered merely coincidental. I have seen some cases of recurring iritis giving a rheumatic history in which I found accessory sinus disease. It is a question not yet settled in my mind whether the iritis was of rheumatic origin or whether the iritis and the rheumatism may not have both been due to infection from the nasal cavities.

There are a number of ways in which disease in the nasal cavities may affect the intra-ocular structures: (1) through the venous channels; (2) through the arterial supply; (3) through the sensory and motor nerve-supply; (4) through the sympathetic nerves; (5) probably by general absorption of infectious material. Which

has been the method in any given case I have not been able to determine; nor have I been able to find in the literature theories advanced which seemed to satisfactorily fit my cases.

In closing let me say that while we have not always been able to point out the channel of infection or the method by which the nasal cavity disease influenced the eye, still ophthalmology owes an enormous debt of gratitude to rhinology, and one of my deep regrets—and in this I know that I voice the sentiments of a multitude—is that in my eye work I have not more thoroughly investigated intranasal conditions.

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OPERATIVE TREATMENT OF SUPPURATIVE SINUS DISEASES PRODUCING ORBITAL COMPLICATIONS *

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In 1899 I read a paper before this Association on the accessory sinuses in relation to diseases of the eye. This was probably the first paper on this intricate subject at a joint meeting between the rhinologists and ophthalmologists in America. This subject did not seem to excite much interest on the part of the ophthalmologists at the time; indeed, it is only within the last five or six years that both ophthalmologists and rhinologists have awakened to the fact that the diseases of the accessory sinuses have a most important relation to the orbit and its contents. It is only by a cordial cooperation on the part of ophthalmologists and rhinologists that we are able to arrive at a correct appreciation of the effects of diseased sinuses on the eye, in order that the proper surgical procedures can be adopted to relieve this organ of the many obscure symptoms produced by inflammation in the cavities surrounding the orbit.

In discussing the surgical treatment of diseases of the accessory sinuses producing orbital complications, it is necessary to appreciate thoroughly the intimate relations which these sinuses bear to the walls of the orbit. With so close an anatomic relation between these cavities, it is not difficult to understand why the contents of the orbit should so often be affected by pathologic conditions arising in the sinuses, either from pressure on the walls common to both cavities, from an involvement of the walls in the pathologic process, or by the carrying of septic material through the intercommunication of the veins of the nasal and accessory sinuses with those of the orbital cavity. The sinuses most frequently causing orbital complications are the frontal, ethmoidal and sphenoidal. Disease of the maxillary sinus very rarely acts as a causative factor in the disturbances of the eye, and the disease most frequently met with is the suppurative inflammation.

Among the orbital complications which we are frequently confronted with when the sinuses are abscessed, may be mentioned neuralgia referred to the eye and the supra-orbital nerve; secondary changes in the orbit brought about by mechanical pressure resulting in a change of form in the orbit, in a displacement of the eye-ball with a disturbance of its mobility and function, and in an interference with the flow of the tears; disturbances in the function of the eye, such as dilatation of the pupil and congestion of the papilla, and surcharging of the retinal vessels; narrowing of the field of vision, especially for colors, scotomata, and in severer cases, amblyopia or amaurosis; changes in refraction, abscess of the orbit, lacrimation, exophthalmos, strabismus, mechanical diplopia, mechanical edema with stretching of the upper lid, and retrobulbar neuritis. These symptoms depend on the cavities involved, and the character and intensity of the inflammation existing in them.

After taking into consideration the subjective and objective symptoms, and subjecting the patient to both an ophthalmoscopic and an *x*-ray examination, we are generally able to establish a diagnosis and to determine which cavity or cavities are to be operated on.

INTRANASAL METHODS

The operative treatment may be divided into the intranasal and the external or more radical method. The intranasal method is applicable especially to diseases of the ethmoid cells, and sphenoid cavity. It consists, first, in removing all obstructions, such as polypi and obstructing spurs, and the complete removal of the middle turbinate. This should be done by means of curved scissors or the Luc forceps, under cocain anesthesia. Unless the case is urgent it is better to pack the nasal cavity with gauze until all danger of hemorrhage has passed, which is generally two or three days. We are now in a position to determine the extent of the diseased area in the ethmoid cells. The ethmoid cells are now opened with a rectangular knife similar to one devised by Hajek, and removed by means of a sharp curet or a conchotome. In many cases, if the disease is not too extensive, we are able to remove the affected area, and in this way relieve the pressure on the eye. Ballenger advises the removal of the ethmoid cells and the middle turbinal *en masse*, by means of a knife which he has devised for this purpose. I personally have had no experience with this operation, but he speaks enthusiastically of his method, and, if it is in skilful hands, I can appreciate the great advantages he claims for it.

The sphenoidal sinus can in many cases be approached through the same route after the removal of the middle turbinate, which exposes the anterior wall of the sinus and often brings into view its ostium. A probe passed through this opening is sufficient often times to reveal a diseased condition of the sinus. This opening is rarely large enough to pass an instrument of any size into it; but by means of a small curet it can be enlarged sufficiently to admit a conchotome bent at various angles. Biting upward and downward, nearly the whole of the anterior wall can be removed in a normal sinus. I have in this way opened a large number of abscesses of the sphenoidal sinus and relieved severe pressure on the posterior part of the eye. The tendency, however, is for the opening, no matter how large, to be closed over by a membranous formation requiring frequent removal. Curetting this cavity should be very cautiously done, owing to the danger of injury to the optic nerve or internal carotid artery.

Owing to the irregularities in the sphenoidal sinus, it is not always possible to relieve abscesses in this cavity by the intranasal method. In several instances I have found this cavity to extend outwardly and at the same time dip toward the pterygoid process, and in a preparation which I showed at a meeting of the American Laryngological Association several years ago, it was found to extend some distance down into the internal wing of the pterygoid process. In these cases I have been able to relieve abscesses of the sphenoidal sinus

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producing eye symptoms, by combining the endonasal method with the antral route. The maxillary sinus is opened through the canine fossa, and then with a gouge and sharp curet the sphenoidal cavity can be entered at its most dependent part, and free drainage established. The frontal sinus can in some instances be opened by the endonasal route after the removal of the middle turbinate and the anterior ethmoidal cells. With a curet, an opening sufficiently large to admit the passage of a cannula can be reamed out, and the cavity washed out daily with a saturated solution of boric acid. If the case is not of long standing this method is sometimes effective. Ingals has practiced this method of late, and uses an electric burr, through which a probe is passed into the sinus as a guide; in his hands, it has been successful. This method, however, is unsatisfactory and dangerous, and can be applicable only to those cases of short duration, in which the cavity is small and not filled with granulation tissue.

EXTERNAL OR RADICAL METHODS

If the intranasal methods fail to relieve the diseased process, then the more radical procedure must be resorted to and the cavity opened from the outside. Within recent years there has been a very marked change in the external operation on the sinuses. In the beginning of my work on these cavities I practiced the Ogston-Luc method, or some modification of it, of opening the frontal sinus exclusively; but owing to several recurrences requiring secondary operations, I abandoned this method and left the frontal wound open and allowed the cavity to fill with granulation tissue. This was a slow and very tedious procedure, but as far as the cure of the frontal sinus disease is concerned, it has been most satisfactory; no recurrences have occurred in any of my patients treated in this way.

From the cosmetic side the results are excellent; in the majority of the cases there has not been the slightest deformity resulting. As far as the cure of the frontal sinus disease is concerned, this method is satisfactory, but it failed to give relief in cases complicated by disease of the ethmoid cells presenting orbital complications, especially in those cases in which the diseased process was located in the anterior and posterior ethmoidal cells and sphenoidal sinus.

Owing to the uncertainty of the above methods in completely relieving all the diseased conditions in the frontal, ethmoidal and sphenoidal sinuses, it is best to adopt the more radical operation proposed by Killian, which in the case of the frontal sinus, has for its purpose a complete removal of all the diseased process, and an obliteration of the cavity, and in the ethmoidal labyrinth a complete removal of all the ethmoidal cells as far back as the sphenoid. The anterior or external route for removal of the ethmoid cells is by far the most radical and satisfactory method we have of reaching suppurative conditions of this bone.

TECHNIC OF THE ANTERIOR OPERATION FOR REMOVAL OF THE ETHMOID CELLS

In this operation, the middle turbinate having been previously removed under cocain, the nasal chamber is packed with cotton plugs as advised by Killian in his operation. The incision is then made, commencing at the inner end of the eyebrow and is carried down along the outer edge and to the full extent of the nasal bone. The periosteum is now incised down to the bone, then stripped from the outer half of the nasal bone and from the whole of the nasal process of the superior maxilla.

The next step in the operation is lifting the lacrimal sac from its bed and detaching the periosteum from the inner wall of the orbit. Great care has to be exercised so as not to tear the sac and cause future trouble. Then with a sharp chisel the outer half of the nasal bone and the whole of the nasal process of the superior maxilla are removed down to the level of the lacrimal groove. This exposes the lacrimal bone and the anterior half of the os planum, which can be opened by means of a small chisel and removed with small bone forceps. This exposes the anterior ethmoidal labyrinth, when with bone forceps, we can with ease, working from before backward, remove completely the whole of the ethmoidal cells, back to the sphenoidal sinus. The plugs are now removed from the nose and the edges of the wound are carefully brought together and sutured, some preferring fine wire; but I believe better cosmetic results are obtained if interrupted sutures of very fine silk are used The incision is protected with either a collodion and iodoform dressing, or, preferably, silver foil, and the eye is bandaged. If there should be any intranasal bleeding, the nose can be packed with small strips of iodoform gauze, which can be removed within twenty-four hours. I have not found this necessary, however.

OGSTON-LUC AND KILLIAN METHODS

I have already mentioned the various external operations for the relief of chronic suppuration in the frontal sinus, viz., the method known as the Ogston-Luc and its modifications, and also the method of opening the sinus and removing a whole or part of its anterior wall and treating the cavity as an open wound. The cavity is gently packed with iodoform gauze, which is removed every second or third day. Granulations form and slowly fill the sinus. Care should be taken not to irrigate the wound, as the granulations are weakened thereby and do not grow rapidly. From four to six weeks is required to fill a fairly large cavity by this method, and in my experience it is fairly satisfactory, as far as a cure is concerned.

I have had no depressions of the anterior wall in my cases, such as is spoken of by some operators. This method is useful only in those cases not complicated with ethmoidal and sphenoidal disease.

The operation best suited for a permanent cure of a suppurative frontal sinusitis, with or without eye complications, and with or without ethmoidal and sphenoidal involvement, is the one known as the radical operation by Killian. This operation has for its purpose a complete removal of all diseased conditions of the frontal, ethmoidal and sphenoidal cavities, the most satisfactory method that we have at our command for the relief of these very serious conditions. In the Killian operation the whole of the anterior wall and the floor of the frontal sinus, which is the stumbling-block in the old methods, are removed.

This operation is a formidable one and fraught with danger, not only to the patient's life, but on account of possible serious injury to the eye and its appendages, and therefore, in order not to bring it into disrepute, it should be undertaken only by those surgically qualified. While this operation may be familiar to most, if not all of you, still a description of it may not be out of place here.

TECHNIC OF KILLIAN OPERATION

The turbinate having been removed at a previous sitting, the patient is anesthetized and placed in a semi-recumbent position, at an angle of about forty-five degrees. The nose is then packed with cotton plugs,

from four to five being required, according to its capacity. An incision is then made through the whole length of the eyebrow commencing at the external angle. At the inner end, the incision is carried down along the nasal bone to its lower end. Before making the incision through the skin, Killian advises small cross-cuts to be made in order to facilitate an accurate coaptation of the edges of the wound when it is closed. The incision is then carried through the periosteum over the supra-orbital ridge and nasal bone, leaving the periosteum over the internal angular process where the bridge is to be made intact. The skin and periosteal tissue are now elevated and forcibly retracted from the frontal bone, and with a V-shaped chisel a furrow is cut through the anterior wall of the sinus, parallel with and about a quarter of an inch above the orbital ridge; an opening sufficiently large to admit of a De Vilbiss bone forceps is made, and with this instrument and various-shaped rongeurs, the whole of the anterior wall above the line of the incision can be removed flush with the frontal bone. The sinus is now completely exposed and all diseased tissue including the mucous lining of the cavity and all septa are removed.

The second stage of this operation corresponds to that described as the external method for opening the ethmoid cells. The periosteum is stripped from the outer half of the nasal bone and the nasal process of the superior maxilla. Then with a specially constructed curved elevator, the lacrimal sac is separated from its bed and the periosteum is detached from the inner wall of the orbit and the anterior two thirds of the os planum. The elevator is then turned upwards, detaching the periosteum from the roof of the orbit. Great care has to be observed not to detach the pulley from its attachment. This can be prevented by having an assistant hold his finger over and a little to the inner side of the supra-orbital notch. Gradually, the periosteum is detached from the roof of the orbit as far as its outer angle. Then the outer half of the nasal bone and the nasal process of the superior maxilla are removed by means of a chisel as far as the lower end of the nasal bone, with a V-shaped chisel, and a line is made from the top of the nasal bone upward and outward to the rim of the orbit. This line runs diagonally through the internal angular process of the frontal bone, the upper part of which becomes part of the bridge; the lower part is removed by means of a rongeur. The lacrimal sac and the globe of the eye are retracted outward. Then with bone forceps the lacrimal bone and the os planum are removed, and working from before backward, we can remove the whole of the ethmoidal cells, and the anterior and part of the inferior wall of the sphenoidal sinus. Between the opening made in the frontal wall and the ethmoidal opening, there is a bridge of bone left which is an important factor in reducing the deformity so apt to result. The next step is to remove the roof of the orbit, which can be done with the bone forceps working from below upward, and then standing at the head of the patient and working from above downward, the whole of the floor of the sinus can be removed as far as its outer angle with a chisel. Great care has to be exercised in not detaching the trochlea, otherwise a very uncomfortable complication in the shape of obstinate diplopia results; while this symptom occasionally occurs from slight disturbance of the trochlea, it frequently passes off within a few weeks. Thus far it has happened to me only once, and was very transient in character. A perforated rubber drainage tube or gauze wick is now placed in the floor of the sinus, and brought down through the nose. This drain is allowed to remain from twenty-four to forty-eight hours, when it is removed.

The edges of the periosteum are sutured with catgut, and the external wound closed, great care being exercised to bring the cross-cuts together. The wound is closed either by a subcutaneous suture or numerous interrupted sutures of fine silk. In this latter way I believe we get a finer coaptation of the parts. The wound is then sealed with either silver foil or a 10 per cent. solution of iodoform and collodion. Killian, further to complete the obliteration of the frontal sinus, firmly presses the anterior wall against the posterior. This, however, leaves quite a depression which he afterward corrects by an injection of paraffin. To obviate this depression resulting from the complete removal of the anterior wall of the frontal sinus, Mosher has made a valuable modification of this operation by leaving quite an overhang of the anterior wall of the sinus. A sufficient opening is left so that all diseased conditions and bony septa within the sinus can be removed. I have followed his practice in a number of my more recent operations, and can testify to the greatly improved results over those in the original operation as proposed by Killian.

As has been already stated, the sphenoidal sinus can be opened and completely exenterated in the radical operation on the ethmoid, but it occasionally happens that in certain cases of sphenoidal disease, the sinus dips downward and extends considerably beyond the posterior ethmoidal cells in an outward direction. In these cases I have found certain eye symptoms, such as pain and photophobia, to continue even after the complete opening of the sphenoid in radical ethmoid operation. I have found it necessary in several cases to open the maxillary sinus and remove the diseased bone at the junction of the internal angle of the maxillary and sphenoidal sinuses. Generally speaking, by combining the external route with that through the maxillary sinus, the most obstinate sphenoidal disease can be eradicated.

In conclusion, I would state that in all sinus diseases accompanied by serious eye symptoms, I would give the patient the benefit of the doubt according to the sinus or sinuses involved, and would endeavor to relieve the condition by the endonasal method; but failing in this, I would advise one of the more radical methods as above described. We are more certain of removing all the diseased conditions in the one or more sinuses that may be involved, and the period of convalescence is much shorter than in the older methods, and the danger of relapse is greatly reduced.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. SAUER, ANDREWS AND BRYAN

Dr. C. F. Welty, San Francisco: One case I have had illustrates the point regarding the open dressing of acute cases. My attention was called to that method by a paper written by a New York man, and I followed the advice he gave and had so much deformity that I was sued for malpractice and the suit is still pending. I advised my patient before the operation that such might be the result. We must protect ourselves as well as take care of our patients. Another case I wish to report is an eye case. The patient presented with the eye swollen almost shut. On examination I found polypoid hypertrophy of the middle turbinate and on removing that I found the whole mass of the ethmoid cells full of polypi or material of a polypoid nature. The swelling disappeared. In the course of a month the eye was shut again. I then did a Kilian operation. That is the case I spoke of this morning in which the patient was well within three weeks. Her frontal sinus was so full of polypi that when the mucous

membrane was incised they bulged through. I don't think, however, there is such close association between the eye and the nose as we were led to believe a few years ago. Many men were then reporting indefinite eye symptoms that they attributed to possible nasal conditions. I do not do eye work, but I have not had occasion in my nasal work to call in eye men.

DR. P. SCHOONMAKER, New York: In the postgraduate hospital we frequently have the eye disturbances Dr. Bryan speaks about. Possibly the preceding speaker has not looked for them. In performing the Kilian operation we often get deformity. And in this connection it is important to remember that with the partial operation there is just as complete drainage as when the entire overhang is removed and there is far less deformity.

DR. GEORGE J. LUND, Los Angeles: During the past year I have had two cases that have bothered me considerably and one especially I would like to refer to. A young lady came to me with pain referred to the nasal region, with rapid loss of vision of the left eye, almost complete within a couple of weeks. Examination of the nasal fossæ revealed absolutely no evidence of nasal disease. I was never able to find any pus present. Ophthalmoscopic examination revealed a choked disk and typical optic neuritis. At that time a friend of mine told me of a similar case and of a procedure he used in that case to help in the diagnosis. He saturated a pledget of cotton with argyrol and placed it under the middle turbinate for twenty minutes. I did this and found a deposit of pus showing on the black substance. The patient was advised to have an operation, but refused and passed out of my care. I heard that she never recovered the use of the eye. I believe she had ethmoid disease and that an operation would have saved her eye. In another case, diagnosticated in the same way as ethmoid trouble, operation was followed by improvement in the vision. That little item in regard to diagnosis has been published and it seems to me very useful. As to the relation between eye and nasal diseases I have been the more impressed with that the longer I have practiced.

DR. F. P. EMERSON, Boston: One class of cases is very frequent, in which there is a history of frequent change of glasses with every irritation of the nose. Often there is in these cases a chronic rhinitis, with every exacerbation of which the ocular symptoms appear. The diagnosis of reflexes in the nose in connection with the eyes requires considerable experience. Every year we find additional foci in connection with these reflexes. There may be only a slight pressure of one turbinate on another or some occlusion of a sinus opening. This blocking may not be accompanied by pus. The last speaker's suggestion is useful. Often the discharge of a little secretion is followed by considerable relief to the patient. It has been my experience that if the anterior sphenoid wall is broken down with the curet considerable reaction occurs and the opening may close up. I have not had so much trouble since I have been biting this out clean and enlarging the opening as far as it seems to go. These operations also solve partially the question of how radical the operation shall be. Our eye cases are certainly some of the worst of our cases of sinus involvement. Often they do not come to us until far advanced and the entire floor of the frontal sinus is necrosed. Then nothing but a radical operation will do any good. We are getting to classify these cases better and to recognize better the cases that require radical operative procedures. I think the eye men are appreciating more and more the relation of the nasal cavities to the eye, and more of these cases are being referred to us. Certainly this symposium will be important in an educational way.

DR. A. L. KELSEY, Los Angeles: Dr. Bryan spoke of protection of the trochlear sling in the Kilian operation. I would like to know if he has ever seen any permanent disturbance of ocular equilibrium caused by stripping the trochlear sling from its attachment. It was my privilege some years ago to see and examine a number of cases in which operation had been done previously, one case some three weeks and others of longer duration, and in none was there any permanent lack of equilibrium of the muscles.

DR. A. H. ANDREWS, Chicago: We have a great many reflex eye symptoms in which we find no definite pathologic condition in the eye. We are more likely to find these in connection with the non-purulent diseases of the accessory cavities, those in which the cavity is filled with serous or mucoserous fluid. The inflammatory conditions of the eyes are more likely to be associated with purulent conditions in the cavities. Dr. Welty says he believes these cases are not so common as he formerly thought and it has been some time since he has referred a case of this sort to an ophthalmologist. If these patients find symptoms on the part of the eye they go to the ophthalmologist themselves. The fact that Dr. Welty has not seen these cases does not indicate that they do not exist. Dr. Lund speaks of introducing a pledget of cotton saturated with argyrol under the middle turbinal. I want to give a word of caution in this regard. If you introduce a pledget of cotton saturated with argyrol or anything else, or even dry cotton, under the turbinal, you will soon find mucus on it, and you must differentiate between mucus and pus or mucopurulent discharge. Dr. Emerson speaks of the frequent change of glasses. There are two explanations of that. One is that no glass relieves the patient and he continues to seek relief by frequent change of glasses. The other is that there is an actual change of refraction in these cases. A writer in the *Journal of Ophthalmology* speaks of scleritis associated with purulent disease of the nose, in which there is an actual change in refraction, due to actual change in the shape of the eye. In Dr. Bryan's paper he speaks of using care in curetting the sphenoid. It is always hazardous curetting the upper and outer part of the sphenoid sinus; never the lower and median wall. I would urge more thorough routine examination of these patients. I suggested some years ago the routine exploration of the sphenoid in all suspicious cases and stated that it could be done in the majority of cases without preliminary surgery, without removing the middle turbinate. With a special bend of the probe, we can get into the sphenoid and with a cannula it can be aspirated or blown out with air and its condition determined.

DR. J. H. BRYAN, Washington, D. C.: The last speaker has made a partial reply to Dr. Welty. I think if he will send his patients to an ophthalmologist he will find many cases in which he has overlooked the eye complications. I submit my patients to the ophthalmologist for a thorough examination. I have in this way found some of the most extraordinary cases, I believe, on record, varying from refractive disturbances to scotomata and paralysis of muscles and I think when the entire record is published it will open the eyes of the ophthalmologists as to the serious effects of the diseases of the accessory sinuses. As to detaching the trochlear from the ridge I have had only one case of diplopia lasting a few weeks. It can, I believe, be avoided largely by having an assistant hold his finger over the attachment. But the diplopia passes away without any serious permanent results.

The Spirit of Scientific Inquiry.—Scientific activity implies, of course, thorough disinterestedness. The investigator asks no favors and renders none. Any intimation that he act as a retainer or special pleader, any hint or suggestion that he restrict his explorations within certain limits, lest he injure cherished traditions, is a step toward the confinement of the free spirit of intellectual inquiry. Rather than surrender that freedom of inquiry or the right of untrammeled announcement of fresh discoveries, men of science have in the past submitted to tortures and painful death, and you may be sure that, if need be, they will be ready to sacrifice themselves again. So exalted is the regard in which the man of science holds the ideal to which his life is devoted that he would find in these words of Fichte his solemn pledge: "To this I am called, to bear witness to the truth. My life, my fortunes, are of little moment; the results of my life are of infinite moment. I am a priest of truth; I am in her pay; I have bound myself to do all things, to venture all things, to suffer all things for her. If I should be persecuted and hated for her sake, if I should even meet death in her service, what wonderful thing is it I shall have done—what but that which I clearly ought to?" —Cannon in *Science*.

GANGRENE OF FINGER CAUSED BY 5 PER CENT. PHENOL OINTMENT

O. F. SCHUSSLER, M.D., AND M. A. STERN, M.D.
SOUTH ST. PAUL, MINN.

R. P., an ignorant Hungarian, received a slight scratch on the anterior surface of the second metacarpal (right) about April 17, 1911. He went home and applied a 5 per cent. phenol salve on a closed dressing, according to instructions given him by the druggist who sold the salve. April 24, he reported at my office with finger gangrenous from the distal end of the proximal phalanx to the root of the nail. The gangrene was dry and the finger was completely mummified and as hard as a stone. Moist hot dressings of weak liquor cresolis compositus were applied and by May 1 sloughs were separating. May 20 tendons and periosteum of phalanx had disappeared and May 26 finger was amputated one inch below metacarpophalangeal joint. The bone was soft and mushy and soft tissues devitalized. Recovery was uneventful.

Therapeutics

RINGWORM: TINEA TRICHOPHYTINA

To two very different diseases the name "tinea" has been given: one is tinea favosa, which is caused by the *Achorion schönleinii;* the other is tinea trichophytina, which is caused by the vegetable parasitic fungus trichophyton. It is the latter to which the present remarks will be limited.

The effects of this fungus are usually divided into three subdivisions, according to the particular part of the body affected. When that part of the face on which the beard grows is affected, it is distinguished as tinea barbæ, or ringworm of the beard, or barber's itch. When the hair of the scalp is affected, it is known as tinea tonsurans, or ringworm of the scalp. When other parts of the body are affected it is known as tinea circinata, or ringworm of the body. These three varieties of the disease are also distinguished respectively as tinea trichophytina barbæ, tinea trichophytina capitis, and tinea trichophytina corporis. The same remedies are applicable to the treatment of these three forms of the disease, but the location in which the lesion is found necessitates some difference in their mode of application.

The trichophyton fungus is found and grows in the epidermal layer of the skin. It penetrates into the hair follicles, and also into the root and body of the hair. Its presence in the latter locations renders the application of drugs for its destruction very difficult, and it is on this account that the affection of the hairy scalp and of the beard is especially resistant to treatment.

There are several drugs which are useful in the treatment of the disease when they can be effectively applied. The most important are mercury, hyposulphite of sodium (sodii thiosulphas), tincture of iodin, and sulphur. When there are a few spots on the surface of the body, a useful application is the following:

℞	Gm.	or	c.c.
Hydrargyri chloridi corrosivi	10		gr.ii
Glycerini	5	or	fl.3ii
Aquæ	ad 50		ad fl.℥ii

M. et Sig.—Shake, and rub thoroughly into the lesion, twice a day.

The application of this lotion, or in fact of any remedy, should be preceded by a thorough scrubbing of the affected parts with hot water and soap, preferably soft soap or green soap. When the patient is a young child, care should be exercised not to apply too strong a lotion and not to apply it to too extensive a portion of the body, for too liberal applications of strong mercurial lotions may cause mercurial poisoning.

Another very effective remedy for the trichophyton as well as for other vegetable parasitic growths is the hyposulphite of sodium. This may be used in the strength of 15 to 20 per cent. in water.

If one prefers to use an ointment—and ointments are often exceedingly useful because watery preparations do not easily penetrate the skin—an efficient ointment is the official unguentum hydrargyri ammoniati. This ointment is 10 per cent. in strength. If there are many spots of disease, or the skin is tender, it is well to dilute it with an equal part of lard or petroleum fat, as:

℞	Gm.		
Unguenti hydrargyri ammoniati	15	or	
Adipis benzoinati	15		ää ℥ss

M. et Sig.—Apply to spots twice a day.

Sulphur may be used in ointment or lotion, but is not so efficient.

If the condition is chronic, and these washes and lotions do not prove effective, the patches may be painted with tincture of iodin. This may be repeated every day for several days until the inflammation becomes so great that the application causes objectionable discomfort.

Ointments containing chrysarobin (incorrectly called chrysophanic acid), or pyrogallol (pyrogallic acid) are effective, but should not often be used on account of the fact that they stain the skin and clothing, and sometimes cause considerable inflammation.

When the scalp is affected and the fungus has penetrated the hair follicles, it is often difficult to apply these remedies effectively. It is generally wise to cut the hair short, and even to shave the head. The hairs will usually be found broken, and it is generally desirable to remove as many of the hairs as possible before applying the remedy. The affected parts should then be thoroughly washed with soap and water, and lotions of corrosive sublimate or of the thiosulphate of sodium may be used.

In cases which prove resistant to other treatment, it is sometimes necessary to attempt a cure by producing an active inflammation of the affected part. This may be accomplished by painting the part with tincture of iodin, as has been already mentioned; or croton oil may be rubbed into the affected part; or the part may be painted with cantharidated collodion so as to produce a blister. This will often result in a rapid cure.

The *x*-ray has been used as a germicidal application, and as a promoter of a mild dermatitis (often a forerunner of a cure) in all parts of the body, and with frequent reports of success. The hair, if the ray is used on hairy parts, falls out, but seems to generally soon return.

When the beard is affected, the removal of the hairs can generally be more thoroughly accomplished, and then the various applications already enumerated may be used.

Poultices have been suggested for the purpose of softening the skin and cleaning off the crusts, but they are generally undesirable, as the moist heat favors the growth of the fungus.

These cases are often very obstinate, and treatment must sometimes be carried on, intermittently, for weeks. It often happens that an apparent cure results while a few of the fungi still remain in the skin without showing any evidence of their presence. Consequently, cases

should be kept under observation for some time after a cure is apparently complete, and if any evidence of a return of the disease appears, the treatment should be renewed.

This disease appears more frequently in children than in adults, and the growth of the fungus seems to be favored by high temperature and by moisture. The disease is contagious, and is readily passed from one individual to another. Where considerable numbers of people associate intimately together great care should be observed to prevent one contracting the disease from another. The use of combs, brushes, towels and clothing by different individuals in common should be strictly forbidden, especially when the existence of a single case among a number of children, as for instance in a large family or in a school, is known. It seems likely that with the extension of medical inspection to children in the public schools and with sanitary barber shops, this disease will, in a few years, become exceedingly rare.

INGROWING TOE-NAIL

This rather common, always troublesome, and frequently obstinate affection is usually considered as belonging in the domain of the surgeon, but the general practitioner is often consulted first, and the patient frequently objects to operative treatment. When he does so, he is entitled to receive from his physician such less radical treatment as will increase his comfort and, if possible, cure the disease.

This condition may be the result of an hypertrophy of the nail, which may become thickened and increase laterally so as to become imbedded in the tissues at the side of the nail. More commonly the trouble is due to the patient's carelessness in not keeping his feet clean, in not paying proper attention to the condition of his nails, and in wearing too tight or otherwise ill-fitting shoes. The condition is characterized by swelling, with congestion and inflammation of the tissues, accompanied with considerable, and often intolerable pain.

When it is decided to apply palliative treatment and there is considerable swelling and inflammation in the soft parts, attended with pain, the toe may be poulticed for twenty-four hours with an antiseptic wet dressing. A very efficient and satisfactory antiseptic wet dressing is one of alcohol 1 part and hot water 4 parts. A napkin or a large bunch of loose gauze is thoroughly soaked in this solution and applied about the toe and the part of the foot affected; then the foot and application is surrounded by rubber tissue or oil silk, and a retaining bandage applied. This dressing may be reapplied every six hours. This application will relieve the pain, swelling and inflammation, and soften the nail. It may be preferable to apply constantly for twenty-four or forty-eight hours a warm 1 per cent. solution of phenol (carbolic acid). A strong solution of hydrogen peroxid, 1 part to 4 of water, may also be used as a dressing. The patient, of course, must be quiet in bed, or in a chair with his leg and foot resting on a pillow on another chair.

After these wet dressings have been applied constantly for one or two days, the plan of treatment may be somewhat changed. At each dressing the toe should be allowed to soak in a bowl of hot water for ten minutes. The water may contain 1 per cent. of phenol, or a 1 to 2,000 solution of corrosive sublimate. In this way both the nail and the surrounding tissues are softened and thoroughly cleansed. If there are granulations present, these should be touched with a stick of nitrate of silver (lunar caustic), or with a swab wet with a 25 per cent. solution of nitrate of silver.

An effort should be made to retract the soft tissues from the side of the nail, and as this is accomplished a small piece of sterile gauze or sterile linen should be placed under the edge of the nail between it and the soft tissues. Narrow strips of adhesive plaster may then be applied transversely to the nail and around the toe so as to exert pressure on the soft parts in such a direction as to draw them away from the side of the nail.

After this treatment has been followed for some days, the condition of the parts will usually be found to be greatly improved. The pain, inflammation and swelling of the soft parts will have disappeared, and the edge of the nail will not be overlapped by the soft parts.

By this time the patient wishes to walk about, and then he must be provided with a suitable shoe which will be large enough not to press injuriously on the toe. The toe should also be wrapped in absorbent cotton so as to be protected from the moderate pressure which is more or less inevitable.

Instead of this treatment, some prefer to touch the granulating point with a drop of pure phenol.

In other cases it may be preferable to apply a drying and antiseptic powder, as:

℞	Gm.		
Sodii salicylatis	50	or	gr.x
Acidi borici	50		ʒii

M. et Sig.—Use externally.

Or,

℞	Gm.		
Sodii salicylatis	50		gr.x
Mentholis	2	or	ʒss
Acidi borici ad	50		ad ʒii

M. et Sig.—Use externally.

Or,

℞	Gm.		
Sodii salicylatis	25		gr.v
Aluminis exsiccati	5	or	ʒiss
Acidi borici ad	25		ad ʒi

M. et Sig.—Use externally.

If these simple methods of treatment do not prove effective, a more radical surgical procedure must be resorted to. In this case it is necessary to give the patient a general anesthetic, or to apply sufficient local anesthesia. The congested and swollen soft parts may then be removed with a sharp knife and the raw surface allowed to heal by granulation under suitable dressings. Or, the part of the nail which has grown into the soft parts may be removed by incision and avulsion, along with the matrix beneath it, which will prevent further growth of the nail, and leave the parts free from the irritation of the edge of the nail. In other cases the whole nail may be removed and a part, or the whole, of the matrix so that no part of the nail will grow again.

Infection of Wounds.—The nearer we can approach, without unreasonably delaying the operation, to four clean hands, rubber-gloved, the wiser. (They must be clean, absolutely, because of the occasional tearing or cutting of a glove finger.) With one excellently trained player in the treble, the surgeon takes the bass, making the *magnum opus* a four-handed piece; and there will be, indeed, few or no false notes while this music lasts—certainly a triumph, remembering that the musicians are playing while gloved. To-day, with rare exceptions, infection in a clean wound should mean shame to the surgeon.—Dawbarn in *Medical Record.*

MEDICAL COLLEGES OF THE UNITED STATES

Annual Presentation of Educational Data by the Council on Medical Education

Below are given brief descriptions of the medical colleges in the United States and Canada that are legally chartered to teach medicine, several of which do not grant degrees. The name, address, year of organization, history and date when first class graduated are given in each instance. Unless otherwise stated, a class graduated each subsequent year. Where official reports have been received from the college, information regarding faculty, entrance requirements, length of term, fees, students (excluding specials and postgraduates), graduates, name of dean and next session is given without discrimination, regardless as to whether the college is sectarian or not. In a few instances in which such reports were not received the information published is from other reliable sources. Extracts of rules and the membership of the Association of American Medical Colleges are shown following the list of colleges. Figures showing population of cities and states are taken from the United States Census Bureau's returns for 1910.

ALABAMA

Alabama, population 2,138,093, has two medical colleges, the Medical Department of the University of Alabama and the Birmingham Medical College, located, respectively, in Mobile and Birmingham. The population of Mobile is 51,521 and of Birmingham 132,685.

Birmingham

BIRMINGHAM MEDICAL COLLEGE, Avenue F and Twentieth Street. —Chartered in 1894. The first class graduated in 1895. There are 22 professors and 12 assistants, total 34. The course of instruction embraces four separate sessions of eight months each. The fees are $100 for each of the first three years and $125 for the fourth. The Dean is Dr. B. L. Wyman. Registration, 1910-11, 207; graduates, 28. The eighteenth session begins Sept. 27, 1911, and ends May 10, 1912.

Mobile

UNIVERSITY OF ALABAMA SCHOOL OF MEDICINE, St. Anthony and Lawrence Streets.—Organized in 1859 as the Medical College of Alabama. Classes were graduated in 1861 and in all subsequent years except 1862 to 1868, inclusive. It was reorganized as the Medical Department of the University of Alabama in 1897. All property was transferred to the University of Alabama in 1907. Present title assumed in 1909. The faculty consists of 9 professors and 17 lecturers and assistants, a total of 26. The course of study covers four years of thirty weeks each. The total fees for each of the first three years is $100; for the fourth year, $125. The Dean is Dr. Rhett Goode. The total registration for 1910-11 was 154; graduates, 43. The forty-sixth session begins Sept. 18, 1911, and ends May 8, 1912.

ARKANSAS

Arkansas, population 1,574,449, has one medical college, the Medical Department of the University of Arkansas, located in Little Rock, a city of 45,941.

UNIVERSITY OF ARKANSAS MEDICAL DEPARTMENT, Second and Sherman Streets.—Organized in 1879 as the Medical Department of Arkansas Industrial University. The first class graduated in 1880. It assumed the present title in 1899. In 1911 the College of Physicians and Surgeons united with it and the new school was made an integral part of the University of Arkansas. The faculty consists of 25 professors and 22 lecturers and assistants, total, 47. The course of study covers four years of eight months each. The fees are $100 for each of the first three years and $125 for the fourth year. The dean is Dr. James H. Lenow. Total registration, 1910-11, was 104; graduates, 34. The thirty-third session begins Sept. 15, 1911, and ends May 8, 1912.

CALIFORNIA

California, population 2,337,459, has eight medical colleges. Four are located in San Francisco, a city of 416,912 inhabitants. They are Leland Stanford Junior University College of Medicine, Medical Department of the University of California, Hahnemann Medical College of the Pacific and the College of Physicians and Surgeons. The College of Physicians and Surgeons and the California Eclectic Medical College and the Los Angeles Clinical Department of the University of California are situated in Los Angeles, population 319,198. The Oakland College of Medicine and Surgery is in Oakland, population 150,174. The College of Medical Evangelists is located at Loma Linda, a village near San Bernardino, this latter place having a population of 12,779.

Loma Linda

COLLEGE OF MEDICAL EVANGELISTS.—Organized in 1909. The faculty numbers 10. The course extends over five years of nine months each, but includes a study of the Bible, pastoral training and other non-medical subjects. The total fees each year are $100; matriculation fee, $5, payable but once; graduation fee, $10. The Dean is Dr. George Knapp Abbott. The total registration for 1910-11 was 39; no graduates. The third session begins Sept. 28, 1911, and ends June 26, 1912

Los Angeles

COLLEGE OF PHYSICIANS AND SURGEONS, MEDICAL DEPARTMENT, UNIVERSITY OF SOUTHERN CALIFORNIA, 516 East Washington Street. —Organized in 1903, first class graduated in 1905, became Medical Department, University of Southern California August 11, 1909. The course covers four years of nine months each. The faculty consists of 15 professors and 33 associate professors, lecturers and instructors, a total of 48. The fees are $150 per year, not including matriculation fee, paid but once, $5, and graduation fee, $25. The Dean is Charles W. Bryson, Delta Building, Los Angeles. The registration for 1910-11 was 108; graduates, 8. The next session begins Sept. 18, 1911, and ends June 13, 1912.

CALIFORNIA ECLECTIC MEDICAL COLLEGE, 846 Lyon Street.—Organized in 1879 at Oakland as the California Medical College. Removed to San Francisco in 1887. Suspended in 1906. Reorganized at Los Angeles with the present title in 1907. Classes were graduated in 1880, and in all subsequent years except 1907. It has a faculty of 30 professors. The Dean is Dr. J. A. Munk. The registration for 1910-11 was 24; graduates, 3. The thirty-third session begins September 18, 1911, and ends May 17, 1912.

Oakland

OAKLAND COLLEGE OF MEDICINE AND SURGERY. Thirty-first and Grove Streets.—Organized in 1900, opened in 1902. The first class graduated in 1906. The faculty numbers 33. The course covers four years of nine months each, and the classes are limited to ten students each. The total fees for each of the four years respectively are $210, $200, $150 and $175. The Registrar is Dr. Edward N. Ewer. The total registration for 1910-11 was 21; no graduates. The tenth session begins Aug. 14, 1911, and ends May 18, 1912.

San Francisco

HAHNEMANN MEDICAL COLLEGE OF THE PACIFIC. Homeopathic. Sacramento and Maple Streets.—Organized in 1881 as the Hahnemann Medical College. The first class graduated in 1884. In 1888 it became the Hahnemann Hospital College of San Francisco. It assumed the present name in 1902. It has a faculty of 26 professors and 16 lecturers, instructors, etc., a total of 42. The course covers four years of seven months each. Total fees for the first year are $155, and $100 for each of the other three. The Dean is Dr. James W. Ward, 1380 Sutter Street. The total registration for 1910-11 was 34; graduates, 6. The thirtieth session begins Aug. 10, 1911, and ends April 26, 1912.

COLLEGE OF PHYSICIANS AND SURGEONS, 344 Fourteenth Street. —Organized in 1896. The first class graduated in 1897. The faculty numbers 60. The course covers four years of nine months each. The fees for each of the four years respectively are $165, $160, $160 and $185. The Dean is Dr. Ethan H. Smith. Registration for 1910-11 was 23; graduates, 10. The fifteenth session begins Sept. 4, 1911, and ends June 1, 1912.

San Francisco-Palo Alto

LELAND STANFORD JUNIOR UNIVERSITY, DEPARTMENT OF MEDICINE, University Campus, Palo-Alto, and Sacramento and Webster Streets, San Francisco.—Organized in 1858 as the Medical Department of the University of the Pacific. Discontinued in 1864. Revived in 1870. It became the Medical College of the Pacific, Medical Department of the University College of San Francisco in 1873. Became Cooper Medical College in 1882. A class was graduated in 1860 and in each subsequent year except 1865 to 1869, inclusive. In 1908 an agreement was made to unite with the Leland Stanford Junior University. By the terms of this agreement Cooper Medical College will continue to teach until the classes which entered prior to August, 1909, have been graduated. The last class will be graduated in 1912. Three years of collegiate work are required for admission. During the next session the work of the first, second and third years will be given by Leland Stanford University Medical Department and the fourth year by Cooper Medical College. The faculty of the combined schools consists of 16 professors and 30 lecturers, assistants, etc., a total of 46. The course covers four years of nine months each. The total fees for each of the first and second years are $175; for the third year $170, and for the fourth year $195. The Dean is Dr. R. L. Wilbur, San Francisco. The total registration for 1910-1911 was 76; graduates, 23. The next session at Palo-Alto begins Aug. 31, 1911, and ends May 15, 1912. At San Francisco, the next session begins Aug. 15, 1911, and ends May 10, 1912.

San Francisco-Berkeley-Los Angeles

UNIVERSITY OF CALIFORNIA MEDICAL DEPARTMENT. University Campus, Berkeley; Second and Parnassus Avenues, San Francisco, and Buena Vista and Alpine Streets, Los Angeles.—Organized in

1863 as the Toland Medical College. The first class graduated in 1865. In 1872 it became the Medical Department of the University of California. In 1909 it absorbed the College of Medicine of the University of Southern California, which became a clinical department at Los Angeles. Two years of collegiate work are required for admission. The work of the first two years is given at Berkeley and the work of the last two years at both Los Angeles and San Francisco. The faculty is composed of 28 professors and 76 associates and assistants, a total of 104. The course covers four years of nine months each. The fees are: Matriculation, $5; tuition, $150 each year. The Dean at San Francisco is Dr. Arnold A. D'Ancona; at Los Angeles, Dr. W. Jarvis Barlow. Total registration of the two schools for 1910-11 was 92; graduates, 22. The thirty-ninth session at San Francisco begins Aug. 15, 1911, and ends May 15, 1912. The next session at Los Angeles begins Sept. 4, 1911, and ends May 31, 1912.

COLORADO

Colorado, with a population of 799,024, has one medical college, the University of Colorado, School of Medicine. The first two years of the course are given at Boulder, the seat of the university, while the last two, or clinical years, are given in Denver, which has a population of 213,381.

Boulder-Denver

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE.—Organized in 1883. Classes were graduated in 1885 and in all subsequent years except 1898 and 1899. Denver and Gross College of Medicine was merged Jan. 1, 1911, when the legal right to teach the last two or clinical years in Denver had been secured. The faculty embraces 23 professors and 20 lecturers and assistants, a total of 43. The work embraces a graded course of four years of nine months each. The entrance requirements are two years of college work counting toward a degree in arts in an accredited college or university. The tuition is $75 per year; there are no other fees. The Dean is Dr. William P. Harlow. The total registration for 1910-11 was 152; graduates, 30. The thirtieth session begins Sept. 11, 1911, and ends June 5, 1912.

CONNECTICUT

Connecticut, with a population of 1,114,756, has one medical college, located in New Haven, population 133,605.

New Haven

YALE MEDICAL SCHOOL, York and Chapel Streets.—This is the Department of Medicine of Yale University. In 1810 a charter was granted for the establishment of this school, and in 1813 it was organized as the Medical Institution of Yale College. The first class graduated in 1814. The faculty consists of 16 professors and 55 lecturers and assistants, a total of 71. The requirement for admission is two full years of collegiate work plus evidence of satisfactory preparation in physics, general inorganic chemistry and general biology. The course covers four years of nine months each. The fees are $150 each year; in the first year there are additional fees amounting to $71, in the second $3, and in the fourth year $13. The Dean is Dr. George Blumer. The total registration for 1910-11 was 83; graduates, 20. The ninety-ninth session begins Sept. 28, 1911, and ends June 20, 1912.

DISTRICT OF COLUMBIA

Washington, population 331,069, has three medical colleges; George Washington University Department of Medicine, Georgetown University School of Medicine and Howard University School of Medicine.

Washington

GEORGE WASHINGTON UNIVERSITY DEPARTMENT OF MEDICINE, 1325 H Street, N.-W.—Organized in 1825 as the National Medical College, Medical Department of Columbian College. Classes were graduated in 1826 and in all subsequent years, except 1834 to 1838, and 1861 to 1863, inclusive. The original title was changed to Medical Department of Columbian University in 1873. In 1904, by an act of Congress, it received its present title. The faculty is composed of 30 professors and 43 instructors, demonstrators and assistants, a total of 73. The course covers four years of thirty-two weeks each. The total fees are $150 per year. The Dean is Dr. William C. Borden. The total registration for 1910-11 was 98; graduates, 19. The ninetieth session begins Sept. 27, 1911, and ends June 5, 1912.

GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE, 920 H Street, N.-W.—Organized in 1851. The first class graduated in 1852. The faculty contains 20 professors, 54 instructors and assistants; total 74. The course of study covers four terms of eight and one-half months each. The fees are $150 each year. The Dean is Dr. George M. Kober, 1600 T Street. The registration for 1910-11 was 131; graduates, 14. The sixty-first session begins Sept. 27, 1911, and ends June 13, 1912.

HOWARD UNIVERSITY SCHOOL OF MEDICINE, Fifth and W Streets, N.-W.—Chartered in 1867. Organized in 1869. The first class graduated in 1871. Colored students compose a majority of those in attendance. The faculty comprises 23 professors and 23 lecturers and assistants, 46 in all. The course covers four years of thirty weeks each. The fees of each of the four sessions respectively are $107, $102, $102 and $109. The Dean is Dr. Edward A. Balloch. Registration for 1910-11 was 193; graduates, 28. The forty-fourth session begins Sept. 27, 1911, and ends June 1, 1912.

GEORGIA

Georgia, population 2,609,121, has five medical colleges; Medical College of Georgia, located in Augusta, population 41,046; Atlanta College of Physicians and Surgeons, Atlanta School of Medicine, the Georgia College of Eclectic Medicine and Surgery, and the Hospital Medical College are in Atlanta, a city of 154,839 population.

Atlanta

ATLANTA COLLEGE OF PHYSICIANS AND SURGEONS, Butler and Armstrong Streets.—Organized in 1898 by union of the Atlanta Medical College, organized in 1855, and Southern Medical College, organized in 1878. The first class graduated in 1899. It has a faculty of 23 professors and 29 assistants, a total of 52. The course of study covers four years of seven months each. Fees: $100 each year. The Dean is Dr. W. S. Elkin, 29 Luckie Street. Total registration of students for 1910-11 was 320; graduates, 46. The fourteenth session begins Sept. 27, 1911, and ends May 1, 1912.

ATLANTA SCHOOL OF MEDICINE, Luckie, Barton and Cain Streets.—Organized in September, 1905. The first class graduated in 1906. The course covers four years of seven months each. It has a faculty of 14 professors and 30 lecturers and assistants, a total of 44. The fees each year are $100; graduation fee, $30. The Proctor is Dr. Edward G. Jones. The total registration for 1910-11 was 219; graduates, 47. The seventh session begins Sept. 20, 1911, and ends April 15, 1912.

GEORGIA COLLEGE OF ECLECTIC MEDICINE AND SURGERY, Tanner Street, near Edgewood Avenue.—Organized in 1877 as the Georgia Eclectic Medical College. In 1884 it acquired the charter of the College of American Medicine and Surgery. It assumed its present name in 1886. The first class graduated in 1878. The faculty consists of 13 professors and 6 assistants, a total of 19. Tuition $80 per year; graduation fee, $25. The Proctor is Dr. E. B. Thomas. Total registration for 1910-11 was 81; graduates, 23. The next session begins Sept. 19, 1911, and ends April 20, 1912.

HOSPITAL MEDICAL COLLEGE, Eclectic, Capitol Avenue and Richardson Street.—Organized in 1908. The faculty consists of 16 professors and 8 lecturers and assistants, a total of 24. The tuition fees are $80 each year; graduation fee, $30. The Secretary is Dr. G. W. D. Patterson. Total registration for 1910-11 was 65; graduates, 26. The next session begins Sept. 15, 1911, and ends April 1, 1912.

Augusta

MEDICAL COLLEGE OF GEORGIA, Sixth and Telfair Streets.—Organized in 1828 as the Medical Academy of Georgia, the name being changed to the Medical College of Georgia in 1829. Since 1873 it has been known as the Medical Department of the University of Georgia. Classes were graduated in 1833 and in all subsequent years, except 1862 and 1863. The faculty includes 16 professors and 22 assistants, 38 in all. The course is four years of eight months each. Fees for each of the four years are $100; graduation fee, $30. The Dean is Dr. W. H. Doughty, Jr. The total registration for 1910-11 was 136; graduates, 26. The eightieth session begins Sept. 18, 1911, and ends May 15, 1912.

ILLINOIS

Illinois, population 5,638,591, has eight medical colleges, one of which is a night school, all located in Chicago, a city of 2,185,283 inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, University of Illinois College of Medicine, Hahnemann Medical College, Bennett Medical College, Hering Medical College, Jenner Medical College and Chicago College of Medicine and Surgery.

Chicago

RUSH MEDICAL COLLEGE.—This school was founded in 1837, organized in 1843, was the medical department of Lake Forest University from 1887 until 1898, when it became affiliated with the University of Chicago. The first class graduated in 1844. The faculty is composed of 90 professors, 159 associates, instructors, etc., a total of 249. The requirements for admission are two years of college work, including courses in college chemistry, physics and biology, and a reading knowledge of German or French. The course covers four years of eight and a half months each. An optional fifth year, consisting of a hospital internship or of a fellowship in one of the departments is offered. All freshmen and sophomore studies are given at the University of Chicago. The last two years are given in the clinical building at the corner of Wood and Harrison Streets. The total fees are $180 each year. A matriculation fee of $5 is paid but once, and there are incidentals amounting to from $2 to $5 annually. The Dean is Dr. John M. Dodson. Total registration 1910-11 was 426; graduates, 87. The sixty-ninth session begins Oct. 1, 1911, and ends June 15, 1912.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, Dearborn Street, between Twenty-fourth and Twenty-fifth Streets.—Organized in 1859 as the Medical Department of Lind University. In 1864 it became independent as the Chicago Medical College. It united with Northwestern University in 1869, but retained the name of Chicago Medical College until 1891, when the present name was taken. The faculty comprises 53 professors and 110 lecturers and assistants, a total of 163. The requirements for admission are such as will admit to the College of Liberal Arts of Northwestern University plus two years of college work including courses in physics, chemistry, biology and modern languages. The course covers four years of eight months each. The fees for the first year are $190; second year, $200; third year, $191.50, and fourth year, $185. The Secretary is Dr. Charles Louis Mix. The total registration for 1910-11 was 397; graduates, 158. The fifty-second session begins Oct. 3, 1911, and ends June 3, 1912.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, Honore and Congress Streets.—Organized in 1882 as the College of Physicians and Surgeons. The first class graduated in 1883. It became the Medical Department of the University of Illinois by affiliation in 1896 and an integral part in 1910. Present title assumed in 1911. The American Medical Missionary College was merged into it in 1910. The faculty is composed of 44 professors, 95 assistants and instructors, a total of 139. The fees are $155 each for the first two years, $150 for the third, and $160 for the fourth year. The Dean is Dr. William E. Quine. Total registration for 1910-11 was 508; graduates, 94. The thirtieth session begins Sept. 26, 1911, and ends June 4, 1912.

CHICAGO COLLEGE OF MEDICINE AND SURGERY, 706 South Lincoln Street.—Organized in 1901 as the American College of Medicine and Surgery (Chicago Eclectic Medical College). The latter part of the name was dropped in 1902 and it became the Medical Department of Valparaiso University. Eclecticism was dropped in 1905. The name was changed to the above in 1907. The course covers four years of eight months each. The faculty consists of 39 professors and 34 lecturers and assistants, a total of 73. The total fees for each of the four years, respectively, are $120, $110, $100 and $100. The Registrar is Dr. G. E. Wyneken. The total registration for 1910-11 was 630; graduates, 86. The eleventh session begins Sept. 26, 1911, and ends May 20, 1912.

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL OF CHICAGO, 2811 Cottage Grove Avenue.—Organized in 1859. The first class was graduated in 1861. The faculty includes 38 professors and 46 lecturers, assistants, etc., a total of 84. The course extends over four years of eight months each. The tuition fees are $100 each year. The Registrar is Dr. W. Henry Wilson. The total registration for 1910-11 was 107; graduates, 22. The fifty-second session begins Sept. 27, 1911, and ends May 25, 1912.

HERING MEDICAL COLLEGE, Homeopathic, Wood and York Streets.—Organized in 1892. The first class graduated in 1893. The faculty consists of 28 professors and 22 assistants, instructors, etc., a total of 50. The tuition fees for each of the four years respectively are $115, $105, $110 and $100. The Dean is Dr. Robert N. Morris. The total registration for 1910-11 was 40; graduates, 7. The next session begins Sept. 26, 1911, and ends June 10, 1912.

BENNETT MEDICAL COLLEGE, Fulton and Ada Streets, Medical Department of Loyola University.—Organized in 1868 as the Bennett College of Eclectic Medicine and Surgery. Dropped Eclecticism in 1909. In 1910 it united with the Illinois Medical College and became by affiliation the Medical Department of Loyola University. The first class graduated in 1870. The faculty numbers 102. The course covers four years of thirty weeks each. Fees for each year are $125, with a matriculation fee, paid once, of $5. The President is Dr. John D. Robertson. The total registration for the two colleges in 1910-11 was 283; graduates, 56. The next session begins Sept. 26, 1911, and ends June 13, 1912.

JENNER MEDICAL COLLEGE, an afternoon and evening school, located at 223 West Washington Street.—Organized in 1892. Classes were graduated in 1896 and in all subsequent years. The faculty numbers 42. The Secretary is Dr. John D. MacKellar. Total registration for 1910-11 was 117; graduates, 9. The next session begins Sept. 5, 1911, and ends June 15, 1912.

INDIANA

Indiana, population 2,700,876, has one medical college, the Indiana University School of Medicine, located at Indianapolis, a city of 233,650 people, except that the work of the first year is offered also at Bloomington, the seat of the University.

Bloomington and Indianapolis

INDIANA UNIVERSITY SCHOOL OF MEDICINE.—Organized in 1893, medical course until 1905. In 1907, by union with the State College of Physicians and Surgeons, the complete course in medicine was offered. In 1908 the Indiana Medical College, which was formed in 1907 by the merger of the Medical College of Indiana (organized in 1869) and the Fort Wayne College of Medicine (organized in 1879) merged into it. The faculty consists of 100 professors and 80 lecturers, associates and assistants, a total of 180. Two years of collegiate work are required for admission. The work of the first year may be taken either at Bloomington or at Indianapolis. The work of the other three years is all done at Indianapolis. A fifth optional year leading to the "M.D. *cum laude*" has been added. The Secretary at Bloomington is Dr. B. D. Myers; the Dean is Dr. Charles P. Emerson, Indianapolis. The total registration for 1910-11 was 188; graduates, 52. The next session begins Sept. 21, 1911, and ends June 18, 1912.

IOWA

Iowa, population 2,224,771, has three medical colleges. The College of Medicine of the State University of Iowa and the College of Homeopathic Medicine of the State University of Iowa are located in Iowa City, population 10,091. In Des Moines, population 86,368, is the College of Medicine of Drake University.

Des Moines

DRAKE UNIVERSITY COLLEGE OF MEDICINE.—First two years given on the University Campus, University Avenue, between Twenty-fifth and Twenty-eighth Streets, the clinical years at Fourth and Center Streets. Organized in 1881 as the Iowa Eclectic Medical College. The first class graduated in 1882. In 1887 it merged into the Iowa College of Physicians and Surgeons and became the Medical Department of Drake University. In 1903 it took its present title. The faculty consists of 20 professors and 23 assistants, lecturers, etc., a total of 43. Two years of collegiate work, including courses in physics, chemistry and biology, are required for admission. The work covers four years of nine months each. The total fees are $165 each year. The Dean is Dr. William Wilson Pearson. The total registration for 1910-11 was 72; graduates, 14. The twenty-ninth session begins Sept. 20, 1911, and ends June 12, 1912.

Iowa City

STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE. University Campus.—Organized in 1869. First session began in 1870. First class graduated in 1871. The faculty is made up of 15 professors, 25 lecturers, demonstrators and assistants, a total of 40. Two years of collegiate work, including courses in physics, chemistry and biology, are required for admission. The course of study covers four years of thirty-six weeks each. Total fees for each year are $50 plus a matriculation fee of $10 paid but once and a graduation fee of $10. The Dean is Dr. James R. Guthrie, Dubuque. Total number of students registered for 1910-11 was 118; graduates, 24. The forty-second session begins September 18, 1911, and ends June 12, 1912.

STATE UNIVERSITY OF IOWA COLLEGE OF HOMEOPATHIC MEDICINE.—Organized in 1877. The first class graduated in 1878. The faculty is composed of 11 professors and 19 lecturers and assistants, a total of 30. The work of the first two years is taken in classes with the students of the College of Medicine of the State University of Iowa, and it has the same entrance requirements. The fees are $50 each year, plus a matriculation fee of $10, paid but once, and a graduation fee of $10. The Dean is Dr. George Royal. Total registration for 1910-11 was 18; graduates, 3. The thirty-fourth session begins Sept. 18, 1911, and ends June 2, 1912.

KANSAS

Population 1,690,949, has two medical colleges. Kansas Medical College is in Topeka, population 43,684. The School of Medicine of the University of Kansas gives its first two years in Lawrence, population 12,915, and the last two years in Rosedale, a suburb of the two Kansas Cities, which together have a population of 330,662.

Lawrence and Kansas City

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE.—Organized in 1880. In 1905 it merged with the Kansas City (Mo.) Medical College, founded in 1869, the College of Physicians and Surgeons, founded in 1894, and the Medico-Chirurgical College, founded in 1897. The faculty, including lecturers and clinical assistants, numbers 84. The requirements for admission are two years of collegiate work. The course covers four years of nine months each. The total fees are, for the first two years, $60 per year (and for non-residents of the state, $80); for the last two years, $100 and $110, respectively. The Dean at Lawrence is Dr. Mervin T. Sudler. The Dean at Kansas City is Dr. George Howard Hoxie. The total registration for 1910-11 was 85; graduates, 19. The thirty-second session begins Sept. 13, 1911, and ends June 5, 1912.

Topeka

KANSAS MEDICAL COLLEGE, 521 Quincy Street.—Organized in 1890. The first class graduated in 1892. It has been the Medical Department of Washburn College since 1903. It has a faculty of 31 professors and 10 lecturers and assistants, a total of 41. The course covers four years of nine months each. Fees, $100 yearly. Matriculation fee of $5 paid but once. The Dean is Dr. William E. McVey. Total registration for 1910-11 was 52; graduates, 10. The twenty-second session begins Sept. 12, 1911, and ends June 5, 1912.

KENTUCKY

Kentucky, population 2,289,905, has two medical colleges. They are both situated in Louisville, a city of 223,928 inhabitants, and are as follows: University of Louisville Medical Department and Louisville National Medical College.

Louisville

UNIVERSITY OF LOUISVILLE MEDICAL DEPARTMENT, Eighth and Chestnut Streets.—Organized in 1837 as the Louisville Medical Institute. The first class graduated in 1838, and a class graduated in each subsequent year except 1863. In 1846 the present name was assumed. In 1907 it absorbed the Kentucky University Medical Department. In 1908 it absorbed the Louisville Medical College, the Hospital College of Medicine and the Kentucky School of Medicine. It has a faculty of 42 professors and 50 lecturers and assistants, a total of 92. The course covers four years of thirty-two weeks each. The fees are $105 each year; graduation fee, $25. The Dean is Dr. W. Edward Grant. The total registration for 1910-11 was 447; graduates, 159. The next session begins Oct. 2, 1911, and ends May 30, 1912.

LOUISVILLE NATIONAL MEDICAL COLLEGE. Colored. 112 West Green Street.—Organized in 1888. The first class graduated in 1889. The faculty numbers 23. The course covers four years of seven months each. The fees are $60, $55, $55 and $75 for the four years, respectively. The Dean is Dr. E. S. Porter. Total registration for 1910-11 was 25; graduates, 10. The next session begins Oct. 2, 1911, and ends May 18, 1912.

LOUISIANA

Louisiana, having a population of 1,656,388, contains one medical college, the Medical Department of the Tulane University of Louisiana, situated in New Orleans, a city of 339,075.

New Orleans

MEDICAL DEPARTMENT OF THE TULANE UNIVERSITY OF LOUISIANA. University Campus and 1551 Canal Street.—Organized in 1834 as the Medical College of Louisiana. Classes were graduated in 1835 and in all subsequent years, except 1863-65, inclusive. It was

transferred to Medical Department of the University of Louisiana in 1847 and became the Medical Department of the Tulane University in 1884. The faculty numbers 93. The course covers four years of thirty-two weeks each. One year of collegiate work is required for admission. Total fees are $180 per year; graduation fee, $30. The Dean is Dr. Isadore Dyer. The total registration for 1910-11 was 379; graduates, 90. The seventy-eighth session begins Sept. 29, 1911, and ends May 29, 1912.

MAINE

Maine, population 742,371, has one medical college, located in Brunswick and Portland, the latter having a population of 58,571.

Brunswick, Portland

MEDICAL SCHOOL OF MAINE. The medical department of Bowdoin College. The first two years are given at Bowdoin College, Brunswick, the last two at Portland, building located on Chadwick Street.—Organized in 1820. The first class graduated in 1820. The faculty numbers 41. The course covers four years of eight months each. The total fees are $120 for the first year and $110 for each of the other three years. The Dean is Dr. Alfred Mitchell, Brunswick. Total number of students in 1910-11 was 67; graduates, 13. The ninety-first session begins Oct. 12, 1911, and ends June 19, 1912.

MARYLAND

Maryland, with a population of 1,295,346, contains five medical colleges, all located in Baltimore, a city with 558,485 inhabitants. They are as follows: Johns Hopkins University Medical Department, School of Medicine of the University of Maryland, College of Physicians and Surgeons, Baltimore Medical College and Maryland Medical College.

Baltimore

JOHNS HOPKINS UNIVERSITY MEDICAL DEPARTMENT, Washington and Monument Streets.—Organized in 1893. The first class graduated in 1897. The faculty consists of 23 professors and 80 clinical professors, etc., a total of 112. The requirements for admission demand that the applicant either has (a) completed the chemical-biologic course which leads to the A.B. degree in the university or (b) graduated at an approved college or scientific school and has a knowledge of French and German, physics, chemistry and biology, such as may be obtained from a year's course. The course extends over four years of eight and one-half months each. The charge for tuition is $200 per annum. The Dean is Dr. J. Whitridge Williams. Total registration for 1910-11 was 347; graduates, 85. The nineteenth session begins Oct. 3, 1911, and ends June 11, 1912.

COLLEGE OF PHYSICIANS AND SURGEONS, Calvert and Saratoga Streets.—Organized in 1872. The first class graduated in 1873. In 1878 it united with Washington University School of Medicine. The faculty numbers 62. The work covers four years of eight months each. Total fees are $155 for each of the first three years and $185 for the fourth year. The Dean is Dr. Charles F. Bevan. The total number of students registered in 1910-11 was 289; graduates, 57. The fortieth session begins Oct. 2, 1911, and ends June 16, 1912.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE, Lombard and Greene Streets. Organized in 1807 as the College of Medicine of Maryland. The first class graduated in 1810. In 1812 it became the University of Maryland School of Medicine. The faculty numbers 62. The course covers four years of eight months each. The total fees are $155 each year; graduation fee, $30. The Dean is Dr. R. Dorsey Coale. The total number of students registered in 1910-11 was 324; graduates, 70. The 105th session begins Oct. 2, 1911, and ends June 1, 1912.

BALTIMORE MEDICAL COLLEGE, Madison Street and Linden Avenue.—Organized in 1881. The first class graduated in 1882. The faculty numbers 75. The course covers four years of eight months each. Total fees for the first three years are $125 per year; for the fourth year, $155. The Dean is Dr. David Streett. The total number of students registered in 1910-11 was 205; graduates, 48. The thirtieth session begins Sept. 20, 1911, and ends June 1, 1912.

MARYLAND MEDICAL COLLEGE, 1114 West Baltimore Street.—Organized in 1898. The first class graduated in 1899. The faculty numbers 39. The course covers four years of eight months each. Total fees for the four years, respectively, are $111, $111, $105 and $135. The Dean is Dr. W. S. Smith. The total registration for 1910-11 was 167; graduates, 65. The next session begins Oct. 2, 1911, and ends June 1, 1912.

MASSACHUSETTS

Massachusetts, population 3,366,416, has four medical colleges: Medical School of Harvard University, Boston University School of Medicine, College of Physicians and Surgeons and Tufts College Medical School. They are all situated in Boston, a city of 670,585.

Boston

MEDICAL SCHOOL OF HARVARD UNIVERSITY, Longwood Avenue.—Organized in 1782. The first class graduated in 1788. It has a faculty of 30 professors and 146 associates, assistants, etc., a total of 176. Candidates for admission "must present a degree in arts, literature, philosophy or science from a recognized college or scientific school, with the exception of such persons as may be admitted by special vote of the faculty." The session is four years of eight months each. Fees: Matriculation, $5; tuition, $200 each year. The Dean is Dr. Henry A. Christian. The total registration for 1910-11 was 264; graduates, 87. The 130th session begins Sept. 28, 1911, and ends June 28, 1912.

BOSTON UNIVERSITY SCHOOL OF MEDICINE, 80 East Concord Street.—Organized in 1873. In 1874 the New England Female Medical College, founded in 1848, was merged into it. The first class graduated in 1874. The faculty includes 25 professors, 49 associates, etc., a total of 74. The course covers four years of eight months each. Total fees for the first, second and third years, $127 each, and for the last year $155. The Dean is Dr. John P. Sutherland, 295 Commonwealth Avenue. Total registration for 1910-11 was 86; graduates, 16. The thirty-ninth session begins Oct. 5, 1911, and ends June 6, 1912.

TUFTS COLLEGE MEDICAL SCHOOL, 416 Huntington Avenue.—Organized in 1893 as the Medical Department of Tufts College. The first class graduated in 1894. It has a faculty of 22 professors and 94 assistants, lecturers, etc., a total of 116. The course covers four years of eight months each. The total fees are $155 each year. The Secretary is Dr. Frederic M. Briggs, 416 Huntington Avenue. Total number of students for 1910-11 was 379; graduates, 71. The eighteenth session begins Sept. 27, 1911, and ends June 1, 1912.

COLLEGE OF PHYSICIANS AND SURGEONS, 517 Shawmut Avenue.—Organized in 1880. The first class graduated in 1882. The college announcement gives the names of 226 "matriculants and applicants" for the session of 1909-10, which included both dental and medical students. The same total is given for 1910-11, but 108 are reported as having "registered" for the medical work. The names of some of the students who graduated in 1910 appear in the announcements of this school from six to nine years! There were 23 medical graduates reported in 1911. The Dean is Dr. Thomas D. Crothers. *This college is not recognized by the Massachusetts Medical Society.*

MICHIGAN

Michigan, population 2,810,173, has four medical colleges. Two of these, the University of Michigan Department of Medicine and Surgery and the Homeopathic College of the University of Michigan, are located at Ann Arbor, a city of 14,817 people. Detroit, a city of 465,766 inhabitants, contains two medical colleges, the Detroit College of Medicine and the Detroit Homeopathic College.

Ann Arbor

UNIVERSITY OF MICHIGAN DEPARTMENT OF MEDICINE AND SURGERY.—Organized in 1850. The first class graduated in 1851. It has a faculty composed of 33 professors, 38 associates, instructors, etc., a total of 71. The entrance requirements are two years of college work, including courses in chemistry, physics and biology, with laboratory work, and a reading knowledge of one modern language. The curriculum embraces four years of nine months each. The total fees for Michigan students for the entire course of four years is $350 and for others about $400. The Dean is Dr. Victor C. Vaughan. The total registration for 1910-11 was 200; graduates, 53. The sixty-second session begins Oct. 3, 1911, and ends June 27, 1912.

UNIVERSITY OF MICHIGAN HOMEOPATHIC COLLEGE.—Organized in 1875. The first class graduated in 1877. Although the work of the first two years taken in the same classes with the Department of Medicine and Surgery of the University of Michigan, nevertheless the entrance requirements are still kept at only a high-school education—a difference of two years of collegiate work! It is announced that one year of collegiate work will be required for admission in 1912 and thereafter. The Dean is Dr. W. B. Hinsdale. The total registration for 1910-11 was 92; graduates, 13. The next session begins Oct. 3, 1911, and ends June 27, 1912.

Detroit

DETROIT COLLEGE OF MEDICINE, St. Antoine, Catherine and Mullett Streets and Gratiot Avenue.—Organized in 1885 by consolidation of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, organized in 1880. The first class graduated in 1886. The faculty embraces 23 professors, 101 lecturers, instructors, etc., a total of 124. The course covers four years of eight months each. The Registrar is Dr. F. B. Walker. The total registration for 1910-11 was 163; graduates, 41. The twenty-seventh session begins Sept. 20, 1911, and ends May 23, 1912.

DETROIT HOMEOPATHIC COLLEGE, Lafayette Avenue and Third Street.—Organized in 1899. A class was graduated in 1900 and in each subsequent year. It has a faculty of 36. The course embraces four years of eight months each. Fees: From $75 to $95 per year. The Dean is Dr. D. A. Maclean. The total registration for 1910-11 was 21; graduates, 9. The thirteenth session begins Sept. 14, 1911, and ends May 19, 1912.

MINNESOTA

Minnesota, population 2,075,708, contains one medical college, the College of Medicine and Surgery of the University of Minnesota, situated in Minneapolis. Minneapolis and St. Paul are practically one city, and have a combined population of 516,162.

Minneapolis

UNIVERSITY OF MINNESOTA COLLEGE OF MEDICINE AND SURGERY.—Organized in 1883; reorganized in 1888 by absorption of St. Paul Medical College and Minnesota Hospital Medical College. The first class graduated in 1889. In 1908 the Minneapolis College of Physicians and Surgeons, organized in 1883, was merged. In 1909 the Homeopathic College of Medicine and Surgery was merged and provision made for elective chairs in didactic materia medica and therapeutics. Students electing these courses on graduation will receive the degree of Doctor of Medicine in Homeopathy. The faculty includes 67 professors and clinical professors and 81 associate professors, assistants, etc., a total of 148. The curriculum covers five years of nine months each, including a year's internship

in a hospital. The entrance requirements are two years of university work which must include one year each of physics, general chemistry, qualitative analysis, zoology or botany, and German or French, all in addition to a four-year high school course, including Latin. Total fees for the first and second years are $150 each, and for the third and fourth years $100 each; microscopic rental, $1 to $4 per annum. The Dean is Dr. F. F. Wesbrook. The total registration for 1910-11 was 172, including 6 Hamline University students; the graduates of 1911 numbered 31, including 6 which were granted degrees by Hamline University. The twenty-fourth session begins Sept. 20, 1911, and ends June 14, 1912.

MISSISSIPPI

Mississippi, population 1,797,114, has two medical colleges. The Medical Department of the University of Mississippi giving only the first two years of the medical course, is located at Oxford, a city of 1,825 inhabitants. The Mississippi Medical College is located at Meridian, population 23,285.

Meridian

MISSISSIPPI MEDICAL COLLEGE, Fifth Street and Twenty-fourth Avenue.—Organized in 1906. The first class graduated in 1907. The faculty numbers 22. The course covers four years of seven months each. The Dean is Dr. T. A. Barber. The total registration for 1910-11 was 95; graduates, 19. The sixth session begins Oct. 2, 1911, and ends April 28, 1912.

Oxford

UNIVERSITY OF MISSISSIPPI MEDICAL DEPARTMENT.—Organized in 1903. Gave only the first two years of the medical course until 1909, when a clinical department was organized at Vicksburg. Graduated one class in 1910, when the clinical years of the course were discontinued. The course covers four years of eight and a half months each. The faculty numbers 14. The Dean is Dr. W. S. Leathers. The total registration for 1910-11 was 50. The ninth session begins Sept. 21, 1911, and ends June 4, 1912.

MISSOURI

Missouri, population 3,293,335, has nine medical colleges. St. Louis, population 687,029, contains five of these, viz., St. Louis College of Physicians and Surgeons, American Medical College, the School of Medicine of St. Louis University, Washington University Medical Department and Barnes Medical College. Kansas City, which with Kansas City, Kan., has a total population of 330,662, has two colleges, namely: the Kansas City Hahnemann Medical College and the Eclectic Medical University. Ensworth Medical College is located in St. Joseph, population 77,403. The Department of Medicine of the University of Missouri is at Columbia, a town of 9,662 people.

Columbia

UNIVERSITY OF MISSOURI SCHOOL OF MEDICINE.—Organized at St. Louis in 1845; was discontinued in 1859, but was reorganized at Columbia in 1872. Teaching of the clinical years was suspended in 1909. The faculty includes 10 professors, 7 assistant professors, lecturers, etc., a total of 17. The course covers two years of nine months each. The entrance requirements are two years of college work, including English, 5 hours; German, 5 hours; general zoology, 5 hours; physics, 5 hours; inorganic chemistry, 5 hours; Elective, 35 hours. Equivalent work in foreign language may be substituted for the English and German. Total fees are $70 each year. The Dean is Dr. C. M. Jackson. Total registration of students for 1910-11 was 34. The next session begins Sept. 21, 1911, and ends June 13, 1912.

Kansas City

KANSAS CITY HAHNEMANN MEDICAL COLLEGE, 1020 East Tenth Street.—Organized in 1888 as the Kansas City Homeopathic Medical College. The first class graduated in 1899. In 1902 it united with the Hahnemann Medical College of the Kansas City University, taking the present title. The Dean is Dr. William E. Cramer. Total registration for 1910-11 was 42; graduates, 7. The next session begins Sept. 7, 1911, and ends May 6, 1912.

ECLECTIC MEDICAL UNIVERSITY, 1423 Independence Avenue.—Organized at Kansas City, Mo., in 1898 with the present title. Moved to Kansas City, Kan., in 1907, and took the name of Western Eclectic College of Medicine and Surgery. Returned to Kansas City, Mo., in 1909 and resumed the present title. First class graduated in 1900. Fees are $100 each year. The Secretary is Dr. D. R. Alexander. The total registration for 1910-11 was 49; graduates, 12. The fourteenth session begins Sept. 4, 1911, and ends May 19, 1912. *Reported not in good standing by the Missouri State Board of Health.*

St. Joseph

THE ENSWORTH MEDICAL COLLEGE, Seventh and Jule Streets.—Organized in 1876 as the St. Joseph Hospital Medical College. In 1882 it merged with the College of Physicians and Surgeons to form the St. Joseph Medical College. In 1888 changed name to Ensworth Medical College. In 1905 merged with the Central Medical College, organized in 1894, to form the Ensworth-Central Medical College. In 1907 the present title was resumed. The faculty numbers 34. The course covers four years of thirty weeks each. The fees for the four years, respectively, are $90, $95, $75 and $95. The Secretary is Dr. T. E. Potter. Total registration for 1910-11 was 56; graduates, 9. The next session begins Oct. 1, 1911, and ends about May 31, 1912.

St. Louis

WASHINGTON UNIVERSITY MEDICAL SCHOOL, 1806 Locust Street.—Organized in 1842 as the Medical Department of St. Louis University. In 1855 it was chartered as an independent institution under the name of St. Louis Medical College. The first class graduated in 1843. In 1891 it became the Washington University Medical School. In 1899 it absorbed the Missouri Medical College. The faculty comprises 39 professors, 54 lecturers and instructors, a total of 93. The course is four years of eight months each. The total fees for the four years are, respectively, $140.25, $142.75, $111.25 and $105.25. The Dean is Dr. George Dock. The total registration for 1910-11 was 123; graduates, 34. The next session begins Oct. 2, 1911, and ends June 8, 1912.

ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE, 1402 South Grand Avenue. Organized in 1901 by union of Marion-Sims Medical College, organized in 1890, and Beaumont Hospital Medical College, organized in 1886. It became the Medical Department of St. Louis University in 1903. The faculty is composed of 37 professors, 75 lecturers and assistants, a total of 112. The curriculum covers four years of eight months each. The total fees are $110 each year. The Dean is Dr. E. P. Lyon. The total registration for 1910-11 was 274; graduates, 50. The next session begins Oct. 2, 1911, and ends May 29, 1912.

ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS, Jefferson Avenue and Gamble Street.—Organized in 1869. Classes graduated in 1870 and in each subsequent year until 1873, when it suspended. It was reorganized in 1879. Classes graduated in 1880 and subsequent years. The Dean is Dr. Waldo Briggs, 2600 Gamble Street. Total registration for 1910-11 was 52; graduates, 22.

BARNES MEDICAL COLLEGE, Garrison and Lawton Avenues.—Organized in 1892. Classes graduated in 1893 and in all subsequent years except 1899. The faculty consists of 40 professors and 8 lecturers and assistants, a total of 48. The course covers four years of eight months each. The total fees are $100 each year. The Dean is Dr. A. R. Kieffer. Total registration for 1910-11 was 176; graduates, 52. The next session begins Sept. 14, 1911, and ends about May 13, 1912.

AMERICAN MEDICAL COLLEGE, 407 South Jefferson Avenue.—Organized in 1873 as an Eclectic College. Eclecticism dropped in 1910. Two classes were graduated each year from 1874 to 1883, inclusive. Since then one class has graduated each year. The course covers four years of nine months each. The fees are $100 each year. The Dean is Dr. James Moores Ball. The total registration for 1910-11 was 46; graduates, 12. The next session begins Sept. 11, 1911, and ends June 2, 1912.

NEBRASKA

Nebraska, population 1,192,214, has three medical colleges: The University of Nebraska College of Medicine and the John A. Creighton Medical College at Omaha, population 124,096, and the Lincoln Medical College at Lincoln, population 43,973.

Lincoln and Omaha

COLLEGE OF MEDICINE UNIVERSITY OF NEBRASKA, Eleventh and R Streets, Lincoln, and Twelfth and Pacific Streets, Omaha.—Organized in 1881 as the Omaha Medical College. The first class graduated in 1882. It became the Medical Department of Omaha University in 1891. In 1902 it affiliated with the University of Nebraska, with the present title. Two years of collegiate work are required for admission. The first two years are given at Lincoln; the last two at Omaha. The faculty is composed of 29 professors and 38 lecturers and instructors, total 67. The fees are approximately $100 per annum. Total registration for 1910-11 was 72; graduates, 10. The next session begins Sept. 12, 1911, and ends May 31, 1912.

Lincoln

LINCOLN MEDICAL COLLEGE. Eclectic. Corner 13th and P Streets. It is the Medical Department of Cotner University.—Organized in 1890. The first class graduated in 1891. The Secretary is Dr. R. H. Spradling. The total registration for 1910-11 was 42; graduates, 9.

Omaha

JOHN A. CREIGHTON MEDICAL COLLEGE, Fourteenth and Davenport Streets. It is the Medical Department of Creighton University.—Organized in 1892. The first class graduated in 1895. It has a faculty of 30 professors and 18 associates, lecturers and assistants, a total of 48. The course of study embraces four years of eight months each. The total fees for the four years, respectively, are $105, $100, $100 and $105. The Dean is Dr. D. C. Bryant, McCague Building. Total number of students registered in 1910-11 was 188; graduates, 43. The twentieth session begins Sept. 4, 1911, and ends April 27, 1912.

NEW HAMPSHIRE

New Hampshire, population 443,140, has one medical college, located at Hanover, population 1,884.

Hanover

DARTMOUTH MEDICAL SCHOOL.—Organized as New Hampshire Medical Institute in 1797. The first class graduated in 1798. It is the Medical Department of Dartmouth College. The faculty is made up of 23 professors and 6 instructors, a total of 29. Two years of collegiate work are required for admission. The course covers four years of eight months each. The fees are $125 each year. The Dean is Dr. John M. Glle. The total registration for 1910-11 was 42; graduates, 11. The work of the first and second years begins with that of the academic department Sept. 21, 1911, and ends June 23, 1912; for the advanced classes the course begins Aug. 1, 1911, and ends April 18, 1912.

NEW YORK

New York State, population 9,113,614, has eleven medical colleges. Eight of these, College of Physicians and Surgeons (Columbia University), Long Island College Hospital, New York Homeopathic Medical College and Hospital, New York Medical College and Hospital for Women, Eclectic Medical College of the City of New York, Cornell University Medical College, the University and Bellevue Hospital Medical College, and Fordham University School of Medicine, are located in New York City, population 4,766,883. Albany Medical College is located in Albany, a city of 100,253 people. The University of Buffalo Medical Department is situated in Buffalo, population 423,715. The College of Medicine, Syracuse University, is in Syracuse, a city of 137,249 inhabitants.

Albany

ALBANY MEDICAL COLLEGE, Lancaster and Jay Streets.—Organized in 1838. The first class graduated in 1839. It became the Medical Department of Union University in 1873. The faculty is composed of 27 professors and 72 lecturers, assistants, etc., a total of 99. The curriculum covers four years of eight months each. Fees: First year, $130; second year, $145; third year, $120, and fourth year, $130. The Registrar is Dr. Willis G. Tucker. The total registration for 1910-11 was 208; graduates, 42. The eighty-first session begins Sept. 19, 1911, and ends May 14, 1912.

Buffalo

UNIVERSITY OF BUFFALO MEDICAL DEPARTMENT, High Street, near Main.—Organized in 1846. The first class graduated in 1847. It absorbed the Medical Department of Niagara University in 1898. The faculty is composed of 36 professors and 46 lecturers, assistants, etc., a total of 82. The course covers four years of eight months each. The total fees for the four years, respectively, are $185, $180, $140 and $140. The Dean is Dr. Matthew D. Mann, 37 Allen Street. Total registration for 1910-11 was 223; graduates, 41. The sixty-sixth session begins Sept. 25, 1911, and ends May 31, 1912.

New York

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS, 437 West Fifty-ninth Street.—Organized in 1807 by the regents of the University of the State of New York as their medical department. The first class graduated in 1811. Affiliated with Columbia College in 1814 and was permanently connected in 1860, when it became the Medical Department of Columbia College. That institution became Columbia University in 1891. The faculty is composed of 55 professors and 121 instructors, demonstrators, etc., a total of 176. Two years of collegiate work, including courses in physics, chemistry and biology are required for admission. The work covers four years of eight months each. The Dean is Dr. Samuel W. Lambert. The total fees for the first year are $255; for the second and third, $250, and $275 for the fourth year. Total registration for 1910-11 was 328; graduates, 70. The 104th session begins Sept. 27, 1911, and ends June 5, 1912.

CORNELL UNIVERSITY MEDICAL COLLEGE, First Avenue and Twenty-Eighth Street, New York City, and Ithaca.—Organized in 1898. The first class was graduated in 1899. The work of the first year may be taken either in Ithaca or New York. The faculty is composed of 53 professors and 86 assistants, lecturers, instructors, etc., a total of 139. All candidates for admission must be graduates of approved colleges or scientific schools and in addition must have such knowledge of physics, inorganic chemistry and biology as may be obtained in college by a year's course in these subjects when accompanied by laboratory work. Fees: First year, $190; second and third, $185 each, and $200 for the fourth year. The Dean is Dr. William M. Polk. Total registration for 1910-11 was 116; graduates, 55. The fourteenth session begins Sept. 27, 1911, and ends June 12, 1912.

ECLECTIC MEDICAL COLLEGE OF THE CITY OF NEW YORK, 239 East Fourteenth Street.—Organized in 1865. The first class graduated in 1867. The faculty consists of 19 professors and 24 lecturers, assistants, etc., a total of 43. The course covers four years of eight months each. The Dean is Dr. Samuel A. Hardy. Total registration for 1910-11 was 77; graduates, 10. The next session begins Sept. 14, 1911, and ends May 1, 1912.

FORDHAM UNIVERSITY SCHOOL OF MEDICINE, Third and Pelham Avenues.—Organized in 1905. First class graduated in 1909. The faculty consists of 35 professors and 34 lecturers and assistants, a total of 69. The course of instruction covers four years of nine months each. Fees, $200 each year. A year's work in a recognized college of liberal arts is required for admission. The Dean is Dr. James J. Walsh. The total registration for 1910-11 was 94; graduates, 17. The seventh session begins Sept. 20, 1911, and ends June 14, 1912.

LONG ISLAND COLLEGE HOSPITAL, Henry Street, near Atlantic Avenue, Brooklyn.—Organized in 1858. The first class graduated in 1860. It has a faculty of 9 professors and 86 assistants, instructors, etc., a total of 95. The course covers four years of eight months each. Fees: First year, $205; second year, $200; third, $180, and $200 for the fourth year. The Secretary is Dr. Joseph H. Raymond. Total registration, 1910-11, was 407; graduates, 73. The fifty-fourth session begins Sept. 28, 1911, and ends June 5, 1912.

NEW YORK HOMEOPATHIC MEDICAL COLLEGE AND HOSPITAL, Eastern Boulevard, between Sixty-third and Sixty-fourth Streets.—Organized in 1858. Incorporated in 1860 as the Homeopathic Medical College for the State of New York. The present title was assumed in 1869. The first class graduated in 1861. The faculty consists of 32 professors and 28 assistants, lecturers, etc., a total of 60. The Dean is Dr. Royal S. Copeland. Total registration for 1910-11 was 210; graduates, 14. The next session begins Oct. 5, 1911, and ends June 1, 1912.

NEW YORK MEDICAL COLLEGE AND HOSPITAL FOR WOMEN, 17-19 West One Hundred and First Street.—Organized in 1863. The first class graduated in 1864. The faculty consists of 30 professors and 20 lecturers and assistants, a total of 50. The course covers four years of thirty weeks each. The fees for each of the four years, respectively, are $155, $150, $135 and $155. The Dean is Dr. Helen Cooley Palmer. The total registration for 1910-11 was 24; graduates, 4. Names of matriculants not printed in the annual announcement. The forty-ninth session begins Oct. 2, 1911, and ends May 24, 1912

UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE, First Avenue and Twenty-sixth Street.—Organized in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. It is the Medical Department of New York University. The faculty is composed of 35 professors and 139 instructors, etc., in all 174. The course covers four years of eight months each. The fees are $200 per year. The Dean is Dr. Egbert Le Fevre. Total registration for 1910-11 was 511; graduates, 68. The next session begins Sept. 27, 1911, and ends June 1, 1912.

Syracuse

SYRACUSE UNIVERSITY COLLEGE OF MEDICINE, 307-311 Orange Street.—Organized in 1872 as the College of Physicians and Surgeons of Syracuse University. The present title was assumed in 1875. In 1872 Geneva Medical College was merged with it. The first class was graduated in 1873. The faculty is composed of 15 professors and 45 assistant professors, lecturers and instructors, in all 60. The course covers four years of eight months each. The completion of two years in an accredited college of liberal arts is required for admission. The total fees for each of the four years, respectively, are $181, $191, $151 and $166. The Dean is Dr. John L. Heffron. The total registration for 1910-11 was 109; graduates, 29. The fortieth session begins Oct. 3, 1911, and ends June 12, 1912.

NORTH CAROLINA

North Carolina, population 2,206,287, has four medical schools, two of which give only the first two years of the medical course. The Medical Department of the University of North Carolina is located at Chapel Hill, population 1,200. The Leonard School of Medicine is at Raleigh, population 19,218. The North Carolina College is at Charlotte, population 34,014. Wake Forest School of Medicine is at Wake Forest, population 823.

Chapel Hill

UNIVERSITY OF NORTH CAROLINA MEDICAL DEPARTMENT.—Organized in 1890. Until 1902 this school gave only the work of the first two years, when the course was extended to four years by the establishment of a department at Raleigh. The first class graduated in 1903. A class was graduated each subsequent year, including 1910, when the clinical department at Raleigh was discontinued. The faculty is composed of 14 professors and 17 lecturers, assistants, etc., a total of 31. The total fees for the two years, respectively, are $114 and $116. The Dean is Dr. G. H. Manning. The total registration for 1910-11 was 51. The twenty-sixth session begins Sept. 5, 1910, and ends May 30, 1911.

Charlotte

NORTH CAROLINA MEDICAL COLLEGE, Church and Sixth Streets.—Organized in 1887 at Davidson as the Davidson School of Medicine. It was a preparatory school only, not granting any degrees until 1903, when it was chartered under its present name. The first class was graduated in 1893. Removed to Charlotte in 1907. The faculty numbers 35. The course covers four years of about eight months each. The fees for the four years, respectively, are $97, $95, $80 and $105. The Dean is Dr. Walter O. Nisbet. The total registration for 1910-11 was 112; graduates, 22. The next session begins Sept. 13, 1911, and ends May 3, 1912.

Raleigh

LEONARD MEDICAL SCHOOL.—Colored. This department of Shaw University was established in 1882. Classes were graduated in 1886, 1888 and in all subsequent years. It has a faculty of 14. The course covers four years of seven months each. The total fees for each year are $52; graduation fee, $10. The Dean is Dr. William Moncure. Total registration for 1910-11, was 120; graduates, 24. The thirtieth session begins Sept. 28, 1911, and ends May 9, 1912.

Wake Forest

WAKE FOREST COLLEGE SCHOOL OF MEDICINE.—This school was organized in 1902. The faculty numbers 16. It gives only the first two years of the medical course, which constitute a part of the course for the B.S. degree. Each annual course extends over nine months. The fees for the first year are $105 and $115 for the second. The Dean is Dr. John Brewer Powers. The total registration for 1910-11 was 38. The tenth session begins Sept. 5, 1911, and ends May 15, 1912.

NORTH DAKOTA

North Dakota, population 577,056, has one medical college, the College of Medicine of the State University of North Dakota, which is situated at University near Grand Forks, a city of 12,478 people. It gives only the first two years of the medical course.

University

UNIVERSITY OF NORTH DAKOTA COLLEGE OF MEDICINE.—Organized in 1905. The faculty is composed of 7 professors and 18 instructors, a total of 25. The course consists of two years' academic work and two years of medical college subjects, occupying nine months

each year. The total fees for each of the medical years are $50. The Dean is M. A. Brannon, A.M. The total registration for 1910-11 was 39. The seventh session begins Sept. 19, 1911, and ends June 14, 1912.

OHIO

Ohio, population 4,767,121, has six medical colleges. Two of these, the Ohio-Miami Medical College of the University of Cincinnati and the Eclectic Medical College, are located in Cincinnati, a city of 364,463 inhabitants. Cleveland, population 560,663, contains two medical schools: Western Reserve Medical College and the Cleveland-Pulte Medical College. Columbus, population 181,548, contains one medical college, the Starling-Ohio Medical College. Toledo, with 168,497 people, has one medical school, the Toledo Medical College.

Cincinnati

THE OHIO-MIAMI MEDICAL COLLEGE OF THE UNIVERSITY OF CINCINNATI.—Organized in 1909 by the union of the Ohio Medical College (founded in 1819) with the Miami Medical College (founded in 1852). The Ohio Medical College became the Medical Department of the University of Cincinnati, April 26, 1896. Under a similar agreement, March 2, 1909, Miami Medical College also merged into the University, when the present title was taken. The faculty consists of 19 professors, 98 associates, assistants, etc., a total of 117. The course covers four years of eight months each. The fees are a tuition fee of $125 a year; a matriculation fee of $5, payable but once, and a graduation fee of $25. The Dean is Dr. Paul G. Woolley. The total registration for 1910-11 was 149; graduates, 38. The next session begins Sept. 25, 1911, and ends June 1, 1912.

ECLECTIC MEDICAL COLLEGE, 630 West Sixth Street.—Organized in 1832 at Worthington as the Worthington Medical College. Removed to Cincinnati in 1843. In 1845 it was chartered as the Eclectic Medical Institute. In 1857 the American Medical College, organized in 1839, was merged into it, and in 1859 the Eclectic College of Medicine and Surgery, organized in 1856, merged into it. In 1910 it assumed its present title. Classes were graduated in 1833 and in all subsequent years except 1839 to 1843, inclusive. It has a faculty of 14 professors and 13 lecturers and assistants, a total of 26. The course covers four years of thirty weeks each. The fees are $100 for each year. The Dean is Dr. Rolla L. Thomas, 702 East McMillan Street. Total registration for 1910-11 was 95; graduates, 27. The next session begins Sept. 18, 1911, and ends May 8, 1912.

Cleveland

CLEVELAND-PULTE MEDICAL COLLEGE, Prospect Avenue and Huron Road.—Homeopathic.—Organized in 1849 as the Western College of Homeopathic Medicine. The first class graduated in 1853. In 1857 it became the Western Homeopathic College and in 1870 it became the Homeopathic Hospital College when the Homeopathic Medical College for Women, organized in 1868, merged into it. In 1894 it became the Cleveland University of Medicine and Surgery. In 1898 it merged with the Cleveland Medical College, organized in 1890, and assumed the title of Cleveland Homeopathic Medical College. In 1910 Pulte Medical College of Cincinnati merged into it and the present title was assumed. The faculty numbers 59. The fees are $125 each year. The Dean is Dr. George H. Quay. Total registration for 1910-11 was 81; graduates, 13. The next session begins Sept. 20, 1911, and ends May 16, 1912.

WESTERN RESERVE UNIVERSITY, MEDICAL DEPARTMENT, St. Clair Avenue and East Ninth Street.—Organized in 1843 as the Cleveland Medical College. The first class graduated in 1845. It assumed the present title in 1881. In 1910 it absorbed the Cleveland College of Physicians and Surgeons. Under the terms of the merger the Ohio Wesleyan University will grant degrees to students enrolled in the College of Physicians and Surgeons prior to the merger. The faculty includes 40 professors and 34 lecturers, assistants, etc., a total of 74. The curriculum embraces four years of eight and one-half months each. Three years of college work are required for admission to first year of medical course. The total fees for the first year are $142 and $135 each for the other three years. The Dean is Dr. B. L. Millikin, 1110 Euclid Avenue. The total registration for 1910-11 was 171, including 64 students of the College of Physicians and Surgeons; there were 36 graduates in 1911, including 22 from the latter school. The sixty-ninth session begins Oct. 1, 1911, and ends June 13, 1912.

Columbus

STARLING-OHIO MEDICAL COLLEGE, Buttles Avenue and Park Street.—Organized in 1907 by the union of Starling Medical College (organized 1834) with the Ohio Medical University (organized 1890). The faculty consists of 27 professors and 37 lecturers, demonstrators, etc., a total of 64. The course covers four years of eight months each. Matriculation, $5; tuition, $135 each year. The Dean is Dr. W. J. Means. The total registration for 1910-11 was 252; graduates, 51. The next session begins Sept. 20, 1911, and ends May 22, 1912.

Toledo

TOLEDO MEDICAL COLLEGE, Cherry and Page Streets.—Organized in 1883. The first class graduated in 1883. The faculty numbers 48. The curriculum embraces four years of eight months each. The fees are $120 for each year, with a matriculation fee of $5, payable once. The Secretary is Dr. E. I. McKesson. The total registration for 1910-11 was 40; graduates, 8. The next session begins Oct. 2, 1911, and ends May 24, 1912.

OKLAHOMA

Oklahoma, population 1,657,155, has one medical college, the School of Medicine of the State University of Oklahoma. The work of the first and second years is given in the academic laboratories at Norman, a city of 3,040 inhabitants. The work of the third and fourth years is given in Oklahoma City, which has a population of 64,205 and which is eighteen miles north of Norman.

Norman and Oklahoma City

STATE UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE.—Organized in 1900. Gave only the first two years of the medical course until 1910, when a clinical department was established at Oklahoma City. It has a faculty of 26 professors and 14 instructors, a total of 40. The course is four years of nine months each. An optional course of six years is offered for the degrees of B.S., and M.D. The total fees for the four years, respectively, are $50, $30, $100 and $105. The Secretary is Dr. Walter L. Capshaw, Norman. The total registration for the combined schools for 1910-11 was 63; graduates, 15. The twelfth session begins Sept. 19, 1911, and ends June 13, 1912.

OREGON

Oregon, population 672,765, has two medical colleges: The Medical Department of Willamette University, located at Salem, a city of 14,094 people, and the University of Oregon Medical Department, in Portland, a city of 207,214 population.

Portland

UNIVERSITY OF OREGON MEDICAL DEPARTMENT, Lovejoy and Twenty-third Streets.—Organized in 1887. The first class graduated in 1888. It has a faculty of 14 professors and 36 lecturers, assistants, etc., a total of 50. The course is four years of eight months each. Fees: First year, $142.50; second, $137.50; third, $100.50, and for the fourth, $57.50. The Dean is Dr. Simeon E. Josephi. The total registration for 1910-11 was 72; graduates, 16. The twenty-fifth session begins Sept. 15, 1911, and ends May 15, 1912.

Salem

MEDICAL DEPARTMENT WILLAMETTE UNIVERSITY.—Organized in 1865 at Salem. Classes were graduated in 1867 and in all subsequent years except 1896. It moved to Portland in 1878, but returned to Salem in 1895. The faculty numbers 20. The course is four years of eight months each. The fees for the four years, respectively, are $122.50, $110, $87.50 and $57.50. The Dean is Dr. W. H. Byrd. The total registration for 1910-11 was 47; graduates, 3. The next session begins Oct. 3, 1911, and ends June 1, 1912.

PENNSYLVANIA

Pennsylvania, population 7,665,111, has seven medical colleges. Of these Philadelphia, having a population of 1,549,008, contains six, as follows: University of Pennsylvania Department of Medicine, Jefferson Medical College, Hahnemann Medical College, Woman's Medical College of Pennsylvania, Medico-Chirurgical College of Philadelphia and Temple University Department of Medicine. The other school, the Medical Department of the University of Pittsburgh, is situated in Pittsburgh, a city of 533,905.

Philadelphia

UNIVERSITY OF PENNSYLVANIA DEPARTMENT OF MEDICINE, Thirty-sixth Street and Hamilton Walk.—Organized in 1765. Classes were graduated in 1768 and in all subsequent years except 1772-79, inclusive. The original title was the Department of Medicine, College of Philadelphia, which was changed to the present title in 1791. It granted the first medical diploma issued in America. The faculty is made up of 25 professors, 20 associate adjunct and assistant professors and 121 demonstrators, lecturers, associates, instructors, etc., a total of 166. The requirements for admission are the equivalent of work prescribed for the first two years in recognized colleges, which work must include a knowledge of physics, chemistry and general biology or zoology with laboratory work as specified by the College Entrance Examination Board and, in addition, two foreign languages, one of which must be French or German. The course embraces study of four years of 34 weeks each. The total fees for each of the four years, respectively, are $218, $213, $210 and $211.50. The Dean is Dr. Allen J. Smith. Total registration for 1910-11 was 445; graduates, 151. The next session begins Sept. 29, 1911, and ends June 10, 1912.

JEFFERSON MEDICAL COLLEGE, Tenth and Walnut Streets.—Organized in 1825 as the Medical Department of Jefferson College, Cannonsburg. The first class graduated in 1826. The present title was assumed in 1838. It has a faculty of 33 professors and 97 lecturers, demonstrators, etc., a total of 130. The course of study covers graded work of four years of eight and a half months each. An optional fifth year is offered. The tuition is $180 a year, with a matriculation fee of $5, paid but once. The Dean is Dr. James W. Holland. The total registration for 1910-11 was 559; graduates, 127. The eighty-seventh session begins Sept. 25, 1911, and ends June 3, 1912.

MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA, Cherry Street, between Seventeenth and Eighteenth Streets.—Organized in 1881. The first class graduated in 1882. The faculty is composed of 35 professors and 69 lecturers, assistants, etc., a total of 104: The work embraces four years of eight months each. The fees for each of the four years, respectively, are $162.50, $159, $155.50 and $150. The Dean is Dr. Seneca Egbert. The total registration for 1910-11 was 462; graduates, 74. The thirty-first session begins Sept. 25, 1911, and ends June 7, 1912.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, Twenty-first and N. College Avenue.—Organized in 1850. Classes were graduated in 1851 and in all subsequent years except 1861 and 1862. It has a faculty of 10 professors and 50 assistants, lecturers, etc., in all 60. The curriculum covers four years of eight months each. Fees, about $145 each year. The Dean is Dr. Clara Marshall. The total regis-

tration for 1910-11 was 110; graduates, 32. The sixty-second session begins Sept. 21, 1911, and ends May 31, 1912.

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL.—Organized in 1848 as the Homeopathic Medical College of Pennsylvania. In 1869 it united with the Hahnemann Medical College of Philadelphia, taking the present title. The first class graduated in 1849. It has a faculty of 13 professors and 67 lecturers, instructors, etc., in all 80. The work covers four years of eight and a half months each. Fees: For each year, $150; matriculation, $5. The Dean is Dr. William B. Van Lennep. The total registration for the college year 1910-11 was 135; graduates, 37. The sixty-fourth session begins Sept. 27, 1911, and ends June 6, 1912.

THE TEMPLE UNIVERSITY DEPARTMENT OF MEDICINE, Eighteenth and Buttonwood Streets.—Organized in 1901. The first class graduated in 1904. The faculty numbers 84. It gives a four-year day course. The fees are $150 per year. The Dean is Dr. Frank C. Hammond. The total registration for 1910-11 was 91; graduates, 23. The eleventh session begins Sept. 15, 1911, and ends June 3, 1912.

Pittsburgh

UNIVERSITY OF PITTSBURGH MEDICAL DEPARTMENT, Brereton Avenue and Thirtieth Street.—Organized in 1886 as the Western Pennsylvania Medical College. Became the Medical Department of the University of Pittsburgh in 1909. The first class graduated in 1887. The faculty is composed of 43 professors and 59 associates, assistants, etc., 102 in all. The course of study embraces four years of eight and a half months each. The total fees for each of the four years, respectively, are $235, $220, $155 and $160. The Dean is Dr. Thomas S. Arbuthnot. The total registration for 1910-11 was 240; graduates, 55. The twenty-eighth session begins Sept. 25, 1911, and ends June 12, 1912.

PHILIPPINE ISLANDS

The Philippine Archipelago, having a population of 7,635,436, has one medical college, the University of the Philippines College of Medicine and Surgery. It is located in the City of Manila, which in 1903 had a population of 219,928.

Manila

UNIVERSITY OF THE PHILIPPINES COLLEGE OF MEDICINE AND SURGERY, Manila.—Organized in 1907 as the Philippine Medical School, under the support of the Philippines Commission. Present title in 1910. The faculty numbers 42. The course extends over five years of nine months each. The requirements for admission conform to the standards in the United States and Great Britain. The Dean is Dr. Paul C. Freer. The total registration for 1910-11 was 65; graduates, 3. The fifth session begins June 1, 1911, and ends March 4, 1912.

SOUTH CAROLINA

South Carolina, population 1,515,400, has one medical college, situated in Charleston, a city of 58,833 people.

Charleston

THE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.—Founded in 1823 as the Medical College of South Carolina. In 1832 it was chartered with the present title. Classes were graduated in 1825 and in all subsequent years except 1861 to 1865 inclusive. It has a faculty of 11 professors and 30 lecturers, instructors, etc., a total of 41. The course covers four years of eight months each. The total fees each year are $100. The Dean is Dr. Robert Wilson. Total enrolment for 1910-11 was 203; graduates, 49. The eighty-ninth session begins Oct. 2, 1911, and ends June 3, 1912.

SOUTH DAKOTA

South Dakota, population 583,888, has one medical college, the University of South Dakota College of Medicine, located at Vermilion, a city of 2,147 people.

Vermilion

UNIVERSITY OF SOUTH DAKOTA COLLEGE OF MEDICINE.—Organized in 1907. Offers only the first two years of the medical course. Two years work in a college of liberal arts is required for admission. The faculty numbers 9. The Dean is Christian P. Lommen, B.S. The total registration for 1910-11 was 7. The fifth session begins Sept. 18, 1911, and ends June 6, 1912.

TENNESSEE

Tennessee, population 2,184,789, has six medical colleges. Of these Vanderbilt University Medical Department and Meharry Medical College are situated in Nashville, a city with a population of 106,476. Knoxville, population 37,758, contains one college, the Tennessee Medical College. Memphis Hospital Medical College, the Medical Department of the University of Tennessee and the University of West Tennessee are located in Memphis, population 136,363.

Knoxville

TENNESSEE MEDICAL COLLEGE, Cleveland Street and Dameron Avenue. It is the Medical Department of Lincoln Memorial University. Organized in 1889. The first class graduated in 1890. It has a faculty of 20 professors and 7 assistants, a total of 27. The curriculum covers four years of seven months each. Fees: First three years, each $100; fourth year, $125; matriculation fee, $5; graduation fee, $25. The total registration for 1910-11 was 101; graduates, 24. The twenty-second session begins Oct. 2, 1911, and ends May 9, 1912.

Memphis

UNIVERSITY OF TENNESSEE MEDICAL DEPARTMENT.—Organized 1876 as Nashville Medical College. Became Medical Department University of Tennessee 1879. First class graduated 1877 and a class graduated each subsequent year. In 1909 it united with the Medical Department of the University of Nashville to form the Universities of Nashville and Tennessee. Union dissolved in 1911 and this college removed to Memphis, where it united with the College of Physicians and Surgeons. Total registration in the combined schools in 1910-11 was 308; graduates, 85. The next session begins Sept. 13, 1911, and ends May 7, 1912.

MEMPHIS HOSPITAL MEDICAL COLLEGE, Marshall Avenue and Myrtle Street.—Organized in 1880. The first class graduated in 1881. It has a faculty of 12 professors and 31 lecturers, instructors, etc., a total of 43. The course covers four years of thirty weeks each. The total fees for each of the first three years are $125, for the fourth, $150. The Dean is Dr. W. R. Rogers. Total registration for 1910-11 was 379; graduates, 97. The thirty-second annual session will begin Oct. 12, 1911, and close May 18, 1912.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF WEST TENNESSEE, Colored, 1190 South Phillips Place.—Organized in 1900. The first class graduated in 1904 and a class graduated each subsequent year. It has a faculty of 16. The course is four years of thirty weeks each. The fees are $50 per year; graduation $10 extra. The Dean is Dr. M. V. Lynk. Registration for 1910-11 was 35; graduates, 8. The twelfth session begins Sept. 14, 1911, and ends May 1, 1912.

Nashville

VANDERBILT UNIVERSITY MEDICAL DEPARTMENT, Elm Street and Fifth Avenue.—This school was founded in 1874. The first class graduated in 1875. The faculty consists of 20 professors and 30 lecturers, a total of 50. The course covers four years of eight months each. The total fees for each of the first three years are $125, and for the fourth year, $150. The Dean is Dr. William L. Dudley. The total registration for 1910-11 was 279; graduates, 40. The thirty-eighth session begins Sept. 20, 1911, and ends May 15, 1912.

MEHARRY MEDICAL COLLEGE, Colored, Maple and Chestnut Streets.—This school was organized in 1876 and is the Medical Department of Walden University. The faculty is made up of 12 professors and 14 instructors, demonstrators, etc., 26 in all. The work embraces four years of thirty-two weeks each. The total fees for each of the four years, respectively, are $56, $59, $57 and $65. The Dean is Dr. G. W. Hubbard. Total registration for 1910-11 was 299; graduates, 56. The thirty-sixth session begins Sept. 13, 1911, and ends April 24, 1912.

TEXAS

Texas, population 3,096,542, has four medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 36,981 inhabitants. The Medical Department of Fort Worth University is at Fort Worth, population 73,312. The Baylor University College of Medicine and the Medical Department of Southwestern University are situated in Dallas, population 92,104.

Dallas

BAYLOR UNIVERSITY COLLEGE OF MEDICINE, 435-37 South Ervay Street.—Organized in 1900 as the University of Dallas Medical Department. In 1903 it took its present name and became the Medical Department of Baylor University at Waco. It acquired the charter of Dallas Medical College in 1904. The first class graduated in 1901. The faculty numbers 28. The course is four years of seven months each. The fees are $100 each year; matriculation fee of $5, paid but once; graduation fee, $25. The Dean is Dr. E. H. Cary. Total registration for 1910-11 was 90; graduates, 17. The twelfth session begins Oct. 2, 1911, and ends May 21, 1912.

SOUTHWESTERN UNIVERSITY MEDICAL COLLEGE.—Organized in 1903. The first class graduated in 1904. It has a faculty of 19 professors and 13 instructors, assistants, etc., a total of 32. The course of instruction covers four years of eight months each. The fees for the four years, respectively, are $110, $105, $100 and $125. The Dean is Dr. John O. McReynolds. Total registration for 1910-11 was 69; graduates, 17. The ninth session begins Oct. 2, 1911, and ends May 25, 1912.

Fort Worth

FORT WORTH SCHOOL OF MEDICINE, Medical Department of Texas Christian University, Calhoun and Fifth Streets.—Organized in 1894 as the Medical Department of Fort Worth University. The first class graduated in 1895. Present title in 1911. It has a faculty of 17 professors and 32 lecturers, assistants, etc., in all 49. The course covers four years of seven and a half months each. The total fees for each of the four years, respectively, are $114, $113, $108 and $125. The Dean is Dr. W. R. Thompson. The total registration for the college year 1910-11 was 90; graduates, 28. The eighteenth session begins Sept. 25, 1911, and ends May 16, 1912.

Galveston

UNIVERSITY OF TEXAS DEPARTMENT OF MEDICINE, Avenue B and Ninth Street.—Organized in 1891. The first class graduated in 1892. It has a faculty of 12 professors and 13 lecturers, a total of 25. The curriculum embraces four years of eight months each. The entrance requirement is one year of collegiate work in addition to a four-year high school education. The total fees for the four years, respectively, are $61, $31, $21 and $6. The Dean is Dr. William S. Carter. Total registration for 1910-11 was 177; graduates, 53. The twenty-first session begins Oct. 2, 1911, and ends May 31, 1912.

UTAH

Utah, population 373,351, has one medical college, the Medical Department of the University of Utah, situated at Salt Lake City, which has 92,777 people.

Salt Lake City

UNIVERSITY OF UTAH SCHOOL OF MEDICINE.—Organized in 1906. Gives only the first two years of the medical course. Each course covers thirty-six weeks. Two years of collegiate work are required for admission. The medical faculty consists of 9 professors and 10 lecturers and assistants, a total of 19. The fees are $55 each year. The Acting-dean is Dr. Charles T. Vorhies. Total registration for 1910-11 was 19. The fifth session begins September 18, 1911, and ends June 1, 1912.

VERMONT

Vermont, population 355,956, has one medical school, located at Burlington, a town of 20,468 people.

Burlington

UNIVERSITY OF VERMONT COLLEGE OF MEDICINE. Pearl Street, College Park.—Organized with complete course in 1822. Classes graduated in 1823 to 1836, inclusive, when the school was suspended. It was reorganized in 1853 and classes were graduated in 1854 and in all subsequent years. The faculty numbers 54. The course of study covers four years of thirty weeks each. The total fees for each of the first three years are $135, and $165 for the fourth year. The Secretary is Dr. James N. Jenne. The total registration for 1910-11 was 186; graduates, 40. The next session begins Oct. 30, 1911, and ends June 27, 1912.

VIRGINIA

Virginia, population 2,061,612, has three medical colleges, one, the Medical Department of the University of Virginia, situated in Charlottesville, population 6,765, and two, the Medical College of Virginia and the University College of Medicine, in Richmond, population 127,628.

Charlottesville

UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE.—Organized in 1827. Classes were graduated in 1828 and in all subsequent years except 1865. It has a faculty of 16 professors and 17 lecturers, instructors, assistants, etc., a total of 33. The requirements for admission are the completion of a four years' high school course, or its equivalent, and a year of college work devoted to chemistry, physics and biology. Total fees each year are $150. The Dean is Dr. R. H. Whitehead. The total registration for 1910-11 was 79; graduates, 20. The next session begins Sept. 14, 1911, and ends June 12, 1912.

Richmond

MEDICAL COLLEGE OF VIRGINIA, Marshall and College Streets.—Organized in 1838 as the Medical Department of Hampden Sydney College. Present title was taken in 1854. Classes were graduated in 1840 and in all subsequent years. It has a faculty of 16 professors and 38 lecturers, instructors, etc., a total of 54. The requirement for admission is a full four-year high school education. The course embraces four years of eight months each. Fees, $100 each year; graduation fee, $30. The Dean is Dr. Christopher Tompkins. The total registration for the college year 1910-11 was 210; graduates, 40. The seventy-fourth session begins Sept. 12, 1911, and ends May 29, 1912.

UNIVERSITY COLLEGE OF MEDICINE, Twelfth and Clay Streets.—Organized in 1893. The first class graduated in 1894. It has a faculty of 65. Curriculum covers four years of eight months each. The total fees are $100 for each year. The Dean is Dr. A. L. Gray. The total registration for the college year 1910-11 was 149; graduates, 33. The nineteenth session begins Sept. 12, 1911, and ends May 24, 1912.

WISCONSIN

Wisconsin, population 2,333,860, has three medical colleges, the Medical Department of the University of Wisconsin, which teaches the first two years of the medical course, and is located at Madison, a city of 25,531 people, and the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons, situated in Milwaukee, a city of 373,857 people.

Madison

UNIVERSITY OF WISCONSIN COLLEGE OF MEDICINE.—Organized in 1907. Gives only the first two years of the medical course. For matriculation at least two years in a college of arts and science or an equivalent training are required, including two years of Latin, a reading knowledge of French and German, and at least a year's work in physics, chemistry and biology. It has a faculty of 12 professors and 4 lecturers, instructors, etc., a total of 16. The Dean is Dr. Charles R. Bardeen. The registration for 1910-11 was 48. The fourth session begins Sept. 27, 1911, and ends June 22, 1912.

Milwaukee

MILWAUKEE MEDICAL COLLEGE, Ninth and Wells Streets.—Organized in 1894. The first class graduated in 1895. It became the Medical Department of the Marquette University in 1907. It has a faculty of 33 professors and 29 lecturers, instructors, etc., a total of 62. The course covers four years of eight months each. The total fees are $135 each for the first three years and $150 for the fourth year. The Dean is Dr. Warren B. Hill. The total registration for 1910-11 was 253; graduates, 48. The eighteenth session begins Oct. 3, 1911, and ends May 27, 1912.

WISCONSIN COLLEGE OF PHYSICIANS AND SURGEONS, Fourth Street and Reservoir Avenue.—Organized in 1893. The first class graduated in 1894. In 1898 it became the medical department of Carroll College. It has a faculty of 20 professors and 34 lecturers, instructors, etc., a total of 54. The curriculum includes four years of eight months each. Total fees each year for the four years, respectively, are $145, $135, $130 and $145. The Dean is Dr. Thomas C. Phillips. The total registration for 1910-11 was 55; graduates, 16. The twentieth session begins Oct. 2, 1911, and ends May 24, 1912.

CANADA

Manitoba

MANITOBA MEDICAL COLLEGE, Winnipeg.—It is the Medical Faculty of the University of Manitoba. Organized in 1883, first class graduated in 1886 and a class graduated each subsequent year. The faculty numbers 50. The fees are $155 for the first year and $150 for each subsequent year. The entire course covers five years. The Dean is Dr. H. H. Chown, 263 Broadway, Winnipeg. Total registration for 1910-11 was 137; graduates, 18. The next session begins Oct. 1, 1911, and ends May 1, 1912.

Nova Scotia

DALHOUSIE MEDICAL COLLEGE, MEDICAL FACULTY OF DALHOUSIE UNIVERSITY, Halifax.—Organized 1867 as Halifax School of Medicine, united same year with Dalhousie University, separately incorporated 1876, affiliated with Dalhousie University 1885, first class graduated 1872 and a class graduated each subsequent year except 1873 and 1886. The Medical Faculty of Dalhousie University is the Examining Board for Nova Scotia and teaches only the premedical branches; Halifax Medical College taught the medical courses, but the Medical Faculty conducted the examinations and granted the degrees. Entire control secured by Dalhousie University in 1911. The course covers four years. The Dean is Dr. George L. Sinclair; the Secretary is Dr. A. W. H. Lindsay. The total registration for 1910-11 was 71; graduates, 16. The next session begins Aug. 31, 1911, and ends April 28, 1912.

Ontario

UNIVERSITY OF TORONTO FACULTY OF MEDICINE, Toronto.—Organized 1843 as the Medical Faculty of King's College. Abolished in 1853. Re-established in 1887. The course of study covers five years of eight months each. In 1903 it absorbed Trinity Medical College. The Secretary is Dr. A. Primrose. The total registration for 1910-11 was 510; graduates, 143. The next session begins Sept. 27, 1911, and ends May 18, 1912.

MEDICAL FACULTY OF QUEEN'S UNIVERSITY, Kingston.—Organized 1854, first class graduated in 1855, and a class graduated each subsequent year. The faculty was originally a department of the University, but a separation took place in 1866, when the school was conducted under the charter of the Royal College of Physicians and Surgeons at Kingston. In 1892 the school again became an integral part Queen's University. The fees amount to $105 each year; fee for M.D., C.M. degrees, $30. The course covers five years of seven months each. The total registration in 1910-11 was 232; graduates, 46. The Dean is Dr. A. R. B. Williamson. The next session begins Sept. 13, 1911, and ends April 24, 1912.

MEDICAL DEPARTMENT OF WESTERN UNIVERSITY, London.—Organized in 1881, first class graduated in 1883 and a class graduated each year subsequently. The faculty numbers 26. The course is five years of seven and a half months each. The Registrar is Dr. W. E. Waugh. Total registration for 1910-11 was 129; graduates, 26. The next session begins Sept. 12, 1911, and ends April 30, 1912.

Quebec

MEDICAL FACULTY OF MCGILL UNIVERSITY.—Founded 1824 as Montreal Medical Institution; became the Medical Faculty of McGill University in 1829; first class graduated under the university auspices in 1833. No session between 1836-39 owing to political troubles. In 1905 it absorbed the Faculty of Medicine of the University of Bishop College. The course extends over five years of eight months each. The faculty numbers 100. The total fees for each of the five years, respectively, are $160, $160, $148, $154 and $184. The total registration for 1910-11 was 308; graduates, 31. The Registrar is Dr. John W. Scane. The next session begins Oct. 2, 1911, and ends June 12, 1912.

LAVAL UNIVERSITY MEDICAL DEPARTMENT, Quebec.—The Quebec School of Medicine, organized in 1848, became in 1852 Medical Department of Laval University; first class graduated in 1855, and a class graduated each subsequent year. The course extends over five years. The Dean is Dr. Michael Joseph Ahern, Quebec. Total registration 1910-11 was 84; graduates, 10. The next session begins Sept. 12, 1911, and ends June 20, 1912.

LAVAL UNIVERSITY, MEDICAL DEPARTMENT, Montreal.—Organized in 1878. First class graduated in 1879. The course extends over five years. The Dean is Dr. E. P. Lachapelle. The total registration for 1910-11 was 195; graduates, 51. The next session begins Oct. 2, 1911, and ends June 20, 1912.

MEDICAL COLLEGES OF THE WORLD.

Nation.	Colleges.	Nation.	Colleges.
Argentine	2	Iceland	1
Australia	3	India	5
Austria	7	Ireland	4
Belgium	4	Italy	20
Bolivia	2	Japan	8
Brazil	3	Madagascar	1
Canada	8	Mexico	9
Chile	1	Netherlands	4
China	8	New Zealand	1
Colombia	1	Norway	1
Cuba	1	Peru	1
Denmark	1	Portugal	3
Ecuador	1	Roumania	2
Egypt	1	Russia	11
England	21	Scotland	8
France	7	Spain	9
Germany	20	Sweden	3
Greece	1	Switzerland	2
Guatemala	1	Syria	2
Haiti	1	Turkey	1
Honduras	1	Uruguay	1
Hungary	2	Wales	1

Total medical colleges in all foreign countries.....200
Total in the United States alone.....120

Counting also the 20 sectarian schools, the graduates of which treat diseases, gives the United States a total of 140.

STANDARDS OF THE COUNCIL ON MEDICAL EDUCATION OF THE AMERICAN MEDICAL ASSOCIATION

These standards were prepared by the Council on Medical Education acting under the direction of the House of Delegates of the American Medical Association.

Standard Now Recommended

The standard now recommended prerequisite to the practice of medicine is as follows:

(A) Preliminary education sufficient to enable the candidate to enter our recognized universities, such qualifications to be passed on by the state authorities. (B) A premedical course of one or two years devoted to the sciences of physics, chemistry and biology and to modern languages. (C) Four years in pure medical work, the first two of which should be largely spent in laboratories of anatomy, physiology, pathology, pharmacology, etc., and the last two in close contact with patients in dispensaries and hospitals in the study of medicine, surgery, obstetrics, and the specialities. (D) A final year as an interne in a hospital or dispensary should then complete the medical course.

Standard High School Course

SCHEDULE OF SUBJECTS OFFERED IN ACADEMIC AND SECONDARY SCHOOLS, CREDITS IN WHICH ARE ACCEPTABLE FOR ENTRANCE TO MEDICAL COLLEGES

Based on the requirements of the College Entrance Examination Board.

SUBJECTS	UNITS.	REQUIRED.	ELECTIVE.
ENGLISH			
READING AND PRACTICE	2	2	...
Study and Practice	1	...	1
MATHEMATICS			
ALGEBRA, TO QUADRATICS	1	1	...
ALGEBRA (Quadratic Equations, Binomial Theorem and Progressions	½	...	½
PLANE GEOMETRY	1	1	...
Solid Geometry	½	...	½
Trigonometry	½	...	½
LATIN			
GRAMMAR AND COMPOSITION	1	1	...
CAESAR	1	1	4
Cicero	1	...	1
Virgil	1	...	1
Cornelius Nepos	1	...	1
Greek			
Grammar and Composition	1	*	1
Xenophon	1	...	1
Homer	1	...	1
German			
Elementary	2	**	2
Intermediate	1	...	1
French			
Elementary	2	**	2
Intermediate	1	...	1
Spanish			
Elementary	2	**	2
HISTORY			
UNITED STATES HISTORY	1	1	...
Greek and Roman History	1	...	1
Medieval and Modern	1	...	1
English	1	...	1
SCIENCE †			
Botany and Zoology, each	½	...	½
or Biology	1	...	1
Chemistry	1	...	1
PHYSICS	1	1	...
Physiography	½	...	½
Physiology	½	...	½
Drawing	1	...	1
Music			
Appreciation	1	...	1
Harmony	1	...	1
Total	34	8	26

A *unit* is the credit value of 36 weeks' work of 5 recitation periods per week, each recitation period to be of not less than 40 minutes.

Required Branches: Of the 14 units of high school work it is suggested that the subjects in capitals aggregating 8 units should be required. Other work to the amount of at least 6 units may be made up from any of the other subjects of the above schedule.

* Two units of Greek may be substituted for the two required units of Latin.

** A reading knowledge of German, French or other modern language is recommended in the high school courses of students contemplating the study of medicine without higher preliminary qualifications.

† It should be understood that each science course must include laboratory work.

Under such a scheme the majority of men would begin the study of medicine between 18 and 19 years of age, and would graduate from the hospital internship at from 24 to 25. A college education is recognized as a desirable preparation for a limited number of men, but it is thought that it is not and never will be desirable to make such college education a minimum requirement to the study of medicine, as it would make the age of graduation from 27 to 28 years, which is regarded as too old a period at which the young medical man should begin his life's work.

An Acceptable Medical College

The following outline of the essentials of an acceptable medical college was issued by the Council on Medical Education of the American Medical Association for its suggestive value in the rapid development in progress among the medical colleges in the United States:

1. A strict enforcement of all standards and requirements, the college itself to be held responsible for any instances where they are not enforced.

2. A requirement for admission of at least a four-year high school education superimposed on eight years of grammar school work as defined by the College Entrance Examination Board and required by the Carnegie Foundation for the Advancement of Teaching (see schedule, opposite column).

3. As soon as conditions warrant, the minimum requirement for admission should be enlarged to include at least one year's college work in physics, chemistry and biology and a reading knowledge of at least one modern language, preferably German or French.

4. A requirement that students be in actual attendance in the college within the first week of each annual session and thereafter.

5. That actual attendance at classes be insisted on except for good cause, such as for sickness, and that no credit be given under any circumstances for less than 80 per cent. of attendance on each course.

6. That advanced standing be granted only to students of other acceptable colleges and that in granting advanced standing there shall be no discrimination against the college's full-course student.

7. Careful and intelligent supervision of the entire school by a dean or other executive officer who holds, and has sufficient authority to carry out, fair ideals of medical education as interpreted by modern demands.

8. A good system of records showing conveniently the credentials, attendance, grades and accounts of the students.

9. A fully graded course covering four years of at least 30 weeks each, exclusive of holidays, and at least 30 hours per week of actual work; this course should be clearly set forth in a carefully prepared and printed schedule of lectures and classes.

10. Two years of work consisting largely of laboratory work in thoroughly equipped laboratories in anatomy, histology, embryology, physiology, chemistry (inorganic, organic and physiologic), bacteriology, pathology, pharmacology, therapeutics and clinical diagnosis.

11. Two years of clinical work largely in hospitals and dispensaries, with thorough courses in internal medicine (including physical diagnosis, pediatrics, nervous and mental diseases), surgery (including surgical anatomy and operative surgery on the cadaver), obstetrics, gynecology, laryngology, rhinology, ophthalmology, otology, dermatology, hygiene and medical jurisprudence.

12. At least six expert, thoroughly trained instructors in the laboratory branches, salaried so they may devote their entire time to instruction and to that research without which they cannot well keep up with the rapid progress being made in their subjects. These instructors should rank sufficiently high to have some voice in the conduct of the college. There should also be a sufficient number of assistants in each department to look after the less important details.

13. The medical teaching should be of at least the same degree of excellence as obtains in our recognized liberal arts colleges and technical schools.

14. The members of the faculty, with a few allowable exceptions, should be graduates of institutions recognized as medical colleges and should have had a training in all departments of medicine. They should be appointed because of their ability as teachers and not because they happen to be on the attending staff of some hospital or for other like reasons.

15. The college should own or entirely control a hospital in order that students may come into close and extended contact with patients under the supervision of the attending staff. The hospital should have a sufficiently large number of patients to permit the student to see and study the common variety of surgical and medical cases as well as a fair number in each of the so-called specialties.

16. The college should have easily accessible hospital facilities of not less than 200 patients which can be utilized for clinical teaching (for senior classes of 100 students or less), these patients to represent in fair proportion all departments of medicine.

17. The college should have additional hospital facilities for children's diseases, contagious diseases and nervous and mental diseases.

18. Facilities for at least five maternity cases for each senior student, who should have actual charge of these cases under the supervision of the attending physician.

19. Facilities for at least 30 autopsies during each college session (for senior classes of 100 students or less).

20. A dispensary, or out-patient department, under the control of the college, the attendance to be a daily average of 60 cases (for senior classes of 100 students or less), the patients to be carefully classified, good histories and records of the patients to be kept and the material to be well used.

21. The college should have a working medical library to include the more modern text and reference books and 10 or more leading medical periodicals; the library room to be easily accessible to students during all or the greater part of the day; to have suitable tables and chairs and to have an attendant in charge.

22. A working medical museum having its various anatomic, embryologic, pathologic and other specimens carefully prepared, labeled and indexed so that any specimen may be easily found and employed for teaching purposes.

23. A supply of such useful auxiliary apparatus as a stereopticon, a reflectoscope, carefully prepared charts, embryologic or other models, manikins, dummies for use in bandaging, a Roentgen ray or other apparatus now so generally used in medical teaching.

24. The colleges should show evidences of reasonably modern methods in all departments and evidences that the equipment and facilities are being intelligently used in the training of medical students.

25. A clear statement of the college's requirements for admission, tuition, time of attendance on the classes, sessions and graduation should be clearly set forth, together with complete lists of its matriculants and latest graduating class in regular annual catalogues or announcements.

Definitions of a Medical College* and a Medical School†

"An institution to be ranked as a medical college must have at least six (6) professors giving their entire time to medical work, a graded course of four full years of college grade in medicine, and must require for admission not less than the usual four years of academic or high-school preparation, or its equivalent, in addition to the preacademic or grammar school studies."

By a medical school as differentiated from a medical college is meant a part of a university requiring for admission the equivalent of two years of collegiate work and which offers instruction of not less than two years' duration, leading to the degree of Doctor of Medicine.

* This definition of a college is based on that given in the revised ordinances of the State of New York and which was adopted by the Carnegie Foundation for the Advancement of Teaching as their standard.

† Based on the definition of the term "school" adopted in 1909 by the Association of American Universities.

COLLEGES LISTED AS ACCEPTABLE (CLASS A)

By the Council on Medical Education of the American Medical Association

1. Giving a complete four-year course:

ALABAMA
University of Alabama Medical Department.

CALIFORNIA
Leland Stanford Junior University Medical Department (Cooper Medical College).
University of California Medical Department, San Francisco-Los Angeles.

COLORADO
University of Colorado, School of Medicine.

CONNECTICUT
Yale Medical School.

DISTRICT OF COLUMBIA
George Washington University, Department of Medicine
Georgetown University, School of Medicine.

ILLINOIS
Northwestern University Medical School.
Rush Medical College, University of Chicago.
College of Physicians and Surgeons, Chicago.
Hahnemann Medical College and Hospital, Chicago.

INDIANA
Indiana University School of Medicine.

IOWA
State University of Iowa, College of Medicine.
State University of Iowa, Homeopathic College.
Drake University, College of Medicine.

KANSAS
University of Kansas, School of Medicine.

KENTUCKY
University of Louisville, Medical Department.

LOUISIANA
Tulane University of Louisiana, Medical Department.

MAINE.
Medical School of Maine.

MARYLAND
Johns Hopkins University, Medical Department.
University of Maryland, School of Medicine.
College of Physicians and Surgeons, Baltimore.
Baltimore Medical College.

MASSACHUSETTS
Boston University, School of Medicine.
Harvard Medical School.
Tufts College Medical School.

MICHIGAN
University of Michigan, Department of Medicine and Surgery.
University of Michigan, Homeopathic College.
Detroit College of Medicine.

MINNESOTA
University of Minnesota, College of Medicine and Surgery.

MISSOURI
St. Louis University, School of Medicine.
Washington University Medical Department.
University Medical College, Kansas City.

NEBRASKA
Creighton Medical College.
University of Nebraska, College of Medicine.

NEW HAMPSHIRE
Dartmouth Medical School.

NEW YORK
Albany Medical College.
Columbia University, College of Physicians and Surgeons.
Cornell University Medical College.
Fordham University, School of Medicine.
Long Island College Hospital.
New York Homeopathic Medical College and Hospital.
Syracuse University, Medical Department.
University and Bellevue Hospital Medical College.
University of Buffalo, Medical Department.

OHIO
Ohio-Miami Medical College, Medical Department, University of Cincinnati.
Starling-Ohio Medical College.
Western Reserve University, Medical Department.

OREGON
University of Oregon, Medical Department.

PENNSYLVANIA
Hahnemann Medical College and Hospital, Philadelphia.
Jefferson Medical College.
Medico-Chirurgical College of Philadelphia.
University of Pennsylvania, Medical Department.
Woman's Medical College of Pennsylvania.
University of Pittsburg, Medical Department.

TENNESSE
Vanderbilt University, Medical Department.

TEXAS
University of Texas, Medical Department.

VERMONT
University of Vermont, College of Medicine

VIRGINIA
Medical College of Virginia.
University College of Medicine.
University of Virginia, Department of Medicine.

2. Giving a two-year course acceptably:

MISSISSIPPI
University of Mississippi, Medical Department.

MISSOURI
University of Missouri, Medical Department.

NORTH CAROLINA
University of North Carolina College of Medicine
Wake Forest College, Medical School.

NORTH DAKOTA
University of North Dakota, College of Medicine.

OKLAHOMA
University of Oklahoma School of Medicine.
SOUTH DAKOTA
University of South Dakota, College of Medicine.
UTAH
University of Utah, Department of Medicine.
WEST VIRGINIA
West Virginia University, Department of Medicine.
WISCONSIN
University of Wisconsin, College of Medicine.

3. Medical Schools for the Colored Race:

Howard University, Medical Department, Washington, D. C.
Meharry Medical College, Nashville, Tenn.

Colleges and States Having Higher Requirements

The twenty-eight medical schools which are now requiring as a minimum for entrance two or more years of work in a college of liberal arts in addition to a four-year high-school education are as follows:

College	Began
Johns Hopkins University, Medical Department	1893
Harvard Medical School	1900
Western Reserve University, Medical Department	1901
University of Chicago, Rush Medical College	1904
University of California, Medical Department	1905
University of Minnesota, College of Medicine and Surgery	1907
University of North Dakota, College of Medicine	1907
University of Wisconsin, College of Medicine	1907
Cornell University Medical College	1908
Wake Forest College, School of Medicine	1908
Leland Stanford Junior University, Department of Medicine	1909
Yale Medical School	1909
University of Kansas, School of Medicine	1909
University of Michigan, College of Medicine	1909
University of Nebraska, College of Medicine	1909
University of South Dakota, College of Medicine	1909
University of Colorado, School of Medicine	1910
Indiana University School of Medicine*	1910
State University of Iowa, College of Medicine*	1910
State University of Iowa, College of Homeopathic Medicine	1910
Drake University College of Medicine	1910
University of Missouri, Department of Medicine†	1910
Dartmouth Medical School	1910
Columbia University College of Physicians and Surgeons	1910
Syracuse University College of Medicine*	1910
University of Pennsylvania, Medical Department*	1910
University of Utah, Medical Department*	1910
Northwestern University Medical School‡	1911

* One year required for the session of 1909-10.
† One year has been required since 1906.
‡ One year required since the session of 1908-09.

The thirteen following colleges require in addition to a four-year high-school course one year of work in a college of liberal arts.

College	In Force
Howard University School of Medicine	1910
Kansas Medical College	1910
Tulane University, Medical Department	1910
St. Louis University School of Medicine	1910
University Medical College, Kansas City	1910
Washington University, Medical Department*	1910
University of North Carolina School of Medicine	1910
Ohio-Miami Medical College, University of Cincinnati	1910
University of Oregon, Medical Department	1910
University of Texas, Medical Department	1910
University of Virginia, Department of Medicine	1910
Fordham University School of Medicine	1911
University of Pittsburgh, Medical Department	1911

* Will require two years in 1912 and thereafter.

Six other colleges have stated in printed announcements that one year of collegiate work in addition to a four year high-school education will be required for admission beginning in 1912. These are:

Georgetown University School of Medicine.
Boston University School of Medicine.
Medical School of Maine.
University of Michigan, Homeopathic College.
University and Bellevue Hospital Medical College.
University of Vermont, College of Medicine.

From the fact that forty-seven medical colleges have adopted higher entrance requirements it is interesting to note that nine state examining boards have also adopted preliminary requirements in advance of a four-year high-school education. These are as follows:

State Examining Board of	No. of Years Required.	Affects Students Matriculating.	Affects All Applicants.
North Dakota	2	1907-08	1911
South Dakota	1	1907-08	1911
Iowa	2	1907-08	1911
Minnesota	2	1908-09	1912
Colorado	1	1908-09	1912
Colorado	2	1910-11	1914
Connecticut	1	1910-11	1914
Kansas	1	1910-11	1914
Indiana	1	1909-10	1913
Indiana	2	1910-11	1914
Utah	1	1910-11	1914

There are several other states which are contemplating similar increases in their requirements in the near future.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES

The requirements for admission to and graduation from colleges holding membership in force prior to April 10, 1905, were as follows:

SECTION 1.—Each college holding membership in this Association shall require of each student, before admission to its course of study, an examination, the minimum of which shall be as follows:

1. In English, a composition on some subject of general interest. This composition must be written by the student at the time of the examination, and should contain at least 200 words. It should be criticised in relation to thought, construction, punctuation, spelling and handwriting.

2. In Arithmetic, such questions as will show a thorough knowledge of common and decimal fractions, compound numbers, and ratio and proportion.

3. In Algebra, such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

4. In Physics, such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics and acoustics.

5. In Latin, an examination on such elementary work as the student may offer, showing a familiarity usually attained by one year of study; for example, the reading of the first fifteen chapters of Cæsar's Commentaries, and the translation into Latin of easy English sentences involving the same vocabulary.

SEC. 2.—In place of this examination, or any part of it, colleges, members of this Association, are at liberty to recognise the official certificates of reputable literary and scientific colleges, academies, high schools, and normal schools, and also the medical student's certificate issued by any state examining board covering the work of the foregoing entrance examination.

SEC. 3.—Colleges, members of this Association, may allow students who fail in one or more branches in this entrance examination the privilege of entering the first-year course, but such students shall not be allowed to begin the second course until the entrance requirements are satisfied.

SEC. 4.—Colleges, members of this Association, are free to honor official credentials issued by medical colleges of equal requirements, except in the branches of study embraced in the last year of their own curriculum.

SEC. 5.—Candidates for the degree of Doctor of Medicine in the year 1899 and thereafter shall have attended at least four courses of medical instruction, each course of at least six months' duration, no two courses of which shall have been in the same calendar year.

SEC. 6.—Colleges, members of this Association, are free to give to students who have met the entrance requirements of the Association additional credit for time on the four years' course as follows: (a) To students having the A.B., B.S., or equivalent degree from reputable literary colleges, one year of time; (b) To graduates and students of colleges, of homeopathic or eclectic medicine, as many years as they attended those colleges, provided they have met the previous requirements of the Association and that they pass an examination in materia medica and therapeutics; (3) To graduates of reputable colleges of dentistry, pharmacy, and veterinary medicine, one year of time.

On April 10, 1905, a new constitution was adopted, which is here given with such amendments as have been made since that time (except where the entire section is changed parts affected by later amendments are inclosed in brackets [] and amendments are printed in italics):

ARTICLE III.

SECTION 1.—Every college holding membership in this Association shall demand of each student, under the condition hereinafter stated, as a minimum requirement for admission to the medical course:

(On and after Jan. 1, 1912, the above paragraph is no longer effective, the following substitute having been adopted Feb. 28, 1911:

SECTION 1.—Every college holding membership in this Association shall, on and after Jan. 1, 1912, require for matriculation a completed or unconditioned medical student's certificate, to be granted by a state medical examining and licensing board, or a board empowered by statute to grant such certificates, or a certificate of entrance to the academic department of any state university, or a certificate of entrance to an accredited university or college, providing that said certificate is granted on no less than the following requirements:

(a) A bachelor's degree from an accredited college or university.

(b) A diploma from an accredited high school, normal school or academy requiring for admission evidence of the completion of an eight-year course in primary and intermediate grades, and for graduation not less than four years of study embracing not less than two years (4 points) [of foreign language, of which one must be Latin], two years (4 points) of mathematics, two years (4 points) of English, one year (2 points) of history, two years (4 points) of laboratory science, and six years (12 points) of further credit in language, literature, history or science.

Amended May 6, 1907, as follows:

(b) A diploma from an accredited high school . . . embracing not less than two years (4 points) *of Latin*, two years (4 points) of mathematics, two years (4 points) of English, one year (2 points) of history, [two years (4 points) of laboratory science], and six years (12 points) of further credit in language, literature, history or science.

(Continued on page 645)

TABLE 1.—STATISTICS OF MEDICAL COLLEGES IN THE UNITED STATES AND CANADA

	NAME AND LOCATION OF COLLEGE	Population of city where college is located. (Census of 1910.)	No. of students registered 1910-11.		Graduates 1911.		Grads. with A.B., B.S., or Ph.B.	No. of teachers.	Weeks in college year.	Total fees. (Dollars.)				Executive Officer.	Session of 1911-12.		
			Men.	Women.	Men.	Women.				1st year.	2nd year.	3rd year.	4th year.		Begins 1911.	Ends 1912.	
	ALABAMA		360	1	71	...	7	...	...	...	...	...	...				
1	Birmingham Medical College, Birmingham	132,683	206	1	28	...	1	34	30	100	100	100	125	B. L. Wyman, M.D., Dean	Sept. 27	May 10	1
2	University of Alabama, Medical Department, Mobile	51,521	154	...	43	...	6	26	30	100	100	100	125	Rhett Goode, M.D., Dean	Sept. 18	May 8	2
	ARKANSAS		229	2	76	...	7	...	...	...	...	...	...				
3	College of Physicians and Surgeons, Little Rock (a)	45,941	126	1	42	...	...	...	...	...	...	...	...		.....	.....	3
4	University of Arkansas, Medical Department, Little Rock	45,941	103	1	34	...	7	47	30	100	100	100	125	James H. Lenow, M.D., Dean	Sept. 15	May 8	4
	CALIFORNIA		379	38	65	7	12	...	...	...	...	...	...				
5	College of Physicians and Surgeons, San Francisco	416,912	23	...	10	...	...	60	35	165	160	160	185	Ethan H. Smith, M.D., Dean	Sept. 4	June 1	5
6	Cooper Medical College, San Francisco (b)	416,912	59	1	23	...	2	40	35	...	...	170	195	Henry Gibbons, Jr., M.D., Dean	Aug. 15	May 10	6
7	Hahnemann Medical College of the Pacific, San Francisco.—H	416,912	34	...	6	...	...	42	32	155	100	100	100	James W. Ward, M.D., Dean	Aug. 10	April 26	7
8	Leland Stanford Junior University, Dept. of Med., San Francisco	416,912	14	2	...	...	...	25	34	160	160	150	150	R. L. Wilbur, M.D., Dean, San Francisco	Aug. 31	May 15	8
9	University of California, Medical Department, San Francisco	416,912	48	11	5	1	5	57	36	185	185	160	160	A. A. D'Ancona, M.D., Dean	Aug. 15	May 15	9
10	University of California, Medical Department, Los Angeles	319,198	27	6	11	5	4	47	36	...	...	150	150	W. Jarvis Barlow, M.D., Dean	Sept. 4	May 31	10
11	California Eclectic Medical College, Los Angeles.—E	319,198	24	...	3	...	...	30	32	125	120	100	125	J. A. Munk, M.D., Dean	Sept. 18	May 17	11
12	College of Physicians and Surgeons, Los Angeles	319,198	100	8	7	1	1	48	36	155	155	150	175	Charles W. Bryson, M.D., Dean	Sept. 13	June 13	12
13	Oakland College of Medicine and Surgery, Oakland	150,174	19	2	0	...	...	32	36	210	210	150	175	Edward N. Ewer, M.D., Registrar	Aug. 14	May 18	13
14	College of Medical Evangelists, Loma Linda		31	8	...	...	...	15	36	100	100	100	100	George K. Abbott, M.D., Dean	Sept. 28	June 26	14
	COLORADO		143	9	36	3	14	...	...	...	...	...	...				
15	University of Colorado, School of Medicine, Boulder-Denver	213,381	143	9	36	3	14	77	35	80	80	80	80	William P. Harlow, M.D., Dean	Sept. 11	June 5	15
	CONNECTICUT		83	...	20	...	6	...	...	...	...	...	...				
16	Yale Medical School, New Haven	133,605	83	...	20	...	6	71	35	221	153	150	163	George Blumer, M.D., Dean	Sept. 28	June 20	16
	DISTRICT OF COLUMBIA		412	10	59	2	11	...	...	...	...	...	...				
17	George Washington University, Depart. of Medicine, Washington	331,069	94	4	18	1	...	73	33	150	150	150	150	W. C. Borden, M.D., Dean	Sept. 27	June 5	17
18	Georgetown University, School of Medicine, Washington	331,069	131	...	14	...	5	74	34	165	150	150	150	George M. Kober, M.D., Dean	Sept. 27	June 13	18
19	Howard University, School of Medicine, Washington	331,069	187	6	27	1	6	44	32	107	102	102	109	E. A. Balloch, M.D., Dean	Sept. 27	June 1	19
	GEORGIA		610	2	168	...	8	...	...	...	...	...	...				
20	Atlanta College of Physicians and Surgeons, Atlanta	154,839	330	...	46	...	3	52	28	100	100	100	100	W. S. Elkin, M.D., Dean	Sept. 27	May 1	20
21	Atlanta School of Medicine, Atlanta	154,839	219	...	47	...	5	44	27	100	100	100	130	E. G. Jones, M.D., Proctor	Sept. 20	April 15	21
22	Georgia College of Eclectic Medicine and Surgery, Atlanta.—E	154,839	79	2	23	...	...	19	28	80	80	80	105	Elzie B. Thomas, M.D., Proctor	Sept. 19	April 20	22
23	Hospital Medical College, Atlanta.—E	154,839	65	...	26	...	...	24	27	80	80	80	110	G. W. Patterson, M.D., Secretary	Sept. 15	April 1	23
24	Medical College of Georgia, Augusta	41,040	136	...	26	...	...	38	31	100	100	100	130	W. H. Doughty, Jr., M.D., Dean	Sept. 18	May 15	24
	ILLINOIS		2538	124	513	23	102	...	...	...	...	...	...				
25	Bennett Medical College, Chicago	2,185,283	273	10	50	6	...	102	34	130	125	125	125	John D. Robertson, M.D., President	Sept. 26	June 13	25
26	Chicago College of Medicine and Surgery, Chicago	2,185,283	614	16	80	6	...	73	31	125	120	100	115	G. E. Wyneken, M.D., Registrar	Sept. 20	May 20	26
27	University of Illinois, College of Medicine, Chicago (c)	2,185,283	475	33	87	7	4	139	33	155	155	150	160	William E. Quine, M.D., Dean	Sept. 26	June 4	27
28	College of Medicine and Surgery, Chicago.—Ph.M. (d)	2,185,283	38	11	4	1	...	...	...	...	...	...	...		.....	.....	28
29	Hahnemann Medical College and Hospital, Chicago.—H	2,185,283	100	7	21	1	...	84	32	125	125	125	175	W. Henry Wilson, M.D., Registrar	Sept. 25	May 23	29
30	Hering Medical College, Chicago.—H	2,185,283	36	4	7	...	1	50	33	115	105	110	100	Robert N. Morris, M.D., Dean	Sept. 20	June 6	30
31	Jenner Medical College, Chicago.*	2,185,283	104	13	9	...	...	42	37	130	125	110	135	John D. MacKellar, M.D., Secretary	Sept. 5	June 15	31
32	Northwestern University Medical School, Chicago	2,185,283	397	...	158	...	29	161	32	190	200	192	185	Arthur R. Edwards, M.D., Dean	Oct. 3	June 3	32
33	Reliance Medical College, Chicago.* (e)	2,185,283	96	7	11	1	...	...	...	...	...	...	...		.....	.....	33
34	Rush Medical College, Chicago	2,185,283	403	23	86	1	68	235	33	185	180	180	180	John M. Dodson, M.D., Dean	Oct. 1	June 15	34
	INDIANA		179	9	50	2	4	...	...	...	...	...	...				
35	Indiana University, School of Medicine, Indianapolis	233,650	179	9	50	2	4	167	35	100	100	135	135	Chas. P. Emerson, M.D., Dean, Indianapolis	Sept. 21	June 18	35
	IOWA		197	11	38	3	8	...	...	...	...	...	...				
36	Drake University, College of Medicine, Des Moines	86,368	66	6	13	1	3	43	35	165	165	165	165	W. W. Pearson, M.D., Dean	Sept. 20	June 12	36
37	State University of Iowa, College of Medicine, Iowa City	10,091	114	4	23	1	5	40	35	60	50	50	60	James R. Guthrie, M.D., Dean	Sept. 18	June 12	37
38	State Univ. of Iowa, Coll. of Homeopathic Med., Iowa City.—H	10,091	17	1	2	1	...	24	35	60	50	50	60	George Royal, M.D., Dean	Sept. 18	June 12	38
	KANSAS		123	8	25	3	1	...	...	...	...	...	...				
39	Kansas Medical College, Topeka	43,684	49	3	9	1	1	41	35	100	100	100	100	William E. McVey, M.D., Dean	Sept. 12	June 5	39
40	University of Kansas, School of Medicine, Kansas City (f)	336,662	80	5	16	2	...	87	36	80	380	100	110	George O. Foster, Registrar, Lawrence	Sept. 13	June 5	40
	KENTUCKY		472	...	160	...	...	...	...	...	...	...	...				
41	Louisville National Medical College, Louisville	223,928	25	...	10	...	...	...	...	...	...	...	...	E. S. Porter, M.D., Dean	.....	.....	41
42	University of Louisville, Medical Department, Louisville	223,928	447	...	150	...	...	92	32	105	105	105	125	W. Edward Grant, M.D., Dean	Oct. 2	May 30	42
	LOUISIANA		382	1	90	...	24	...	...	...	...	...	...				
43	Flint Medical College, New Orleans (g)	339,075	14	...	...	...	...	...	...	...	...	...	...		.....	.....	43
44	Tulane University Medical Department, New Orleans	339,075	368	1	90	...	24	93	32	180	180	180	210	Isadore Dyer, M.D., Dean	Sept. 29	May 29	44
	MAINE		67	...	13	...	5	...	...	...	...	...	...				
45	Medical School of Maine, Portland	58,571	67	...	13	...	5	41	33	100	100	100	100	Addison S. Thayer, M.D., Dean, Portland	Oct. 12	June 19	45
	MARYLAND		1282	37	315	16	94	...	...	...	...	...	...				
46	Baltimore Medical College, Baltimore	558,485	205	...	48	...	...	75	34	125	125	125	155	David Streett, M.D., Dean	Sept. 20	June 1	46
47	College of Physicians and Surgeons, Baltimore	558,485	289	...	57	...	...	62	32	155	155	155	185	Charles F. Bevan, M.D., Dean	Oct. 2	June 6	47
48	Johns Hopkins University, Medical Department, Baltimore	558,485	317	30	77	8	85	121	33	217	217	217	217	J. Whitridge Williams, M.D., Dean	Oct. 3	June 11	48
49	Maryland Medical College, Baltimore	558,485	160	7	63	2	2	38	32	111	111	105	135	W. S. Smith, M.D., Dean	Oct. 1	May 31	49
50	University of Maryland, School of Medicine, Baltimore	558,485	324	...	70	...	7	79	32	155	150	150	180	R. Dorsey Coale, M.D., Dean	Oct. 2	June 1	50

	MASSACHUSETTS		853	74	178	19	91	...	...	...	...	...	...							
51	Boston University, School of Medicine.—H	670,585	65	21	10	6	2	74	32	142	127	127	155	John P. Sutherland, M.D., Dean	Oct. 5	June 6	51
52	College of Physicians and Surgeons, Boston (h)	670,585	179	19	19	4	3	58	35	100	120	105	130	Thomas D. Crothers, M.D., Dean	Sept. 20	June 12	52
53	Harvard Medical School, Boston	670,595	284	...	87	...	83	176	36	207	203	200	200	Henry A. Christian, M.D., Dean	Sept. 28	June 28	53
54	Tufts College Medical School, Boston	670,585	345	34	62	9	3	116	32	155	155	155	155	Frederic M. Briggs, Secretary	Sept. 27	June 1	54
	MICHIGAN	670,585	179	19	19	4	3	58	35	100	120	105	130				
55	Detroit College of Medicine, Detroit	465,766	163	...	41	...	...	124	32	115	120	100	130	H. O. Walker, M.D., Secretary	Sept. 20	May 23	55
56	Detroit Homeopathic College, Detroit.—H	465,766	18	3	9	...	1	36	30	95	85	75	95	D. A. MacLachlan, M.D., Dean	Sept. 14	May 1	56
57	University of Michigan, Dept. of Med. and Surg., Ann Arbor	14,817	246	14	57	2	19	71	35	105	95	95	95	Victor C. Vaughan, M.D., Dean	Oct. 3	June 27	57
58	University of Michigan, Homeopathic College, Ann Arbor.—H	14,817	87	5	13	1	2	24	35	105	95	95	95	W. B. Hinsdale, M.D., Dean	Oct. 3	June 27	58
	MINNESOTA		168	16	31	...	8	...	...	...	...	...	...				
59	University of Minnesota, Coll. of Med. and Surg., Minneapolis (i)	516,152	162	10	25	...	8	148	35	150	150	100	100	F. F. Wesbrook, M.D., Dean	Sept. 20	June 14	59
60	Hamline University, Medical Department, Minneapolis (j)	516,152	6	...	6	...	...	...	...	...	...	...	...		.....	.....	60
	MISSISSIPPI		145	...	19	...	1	...	...	...	...	...	...				
61	University of Mississippi, Medical Department, Oxford.†	1,825	50	...	...	...	...	14	34	100	100	...	...	W. S. Leathers, M.D., Dean	Sept. 21	June 4	61
62	Mississippi Medical College, Meridian	23,285	95	...	19	...	1	22	28	85	85	75	100	T. A. Barber, M.D., Dean	Oct. 2	April 28	62
	MISSOURI		971	21	225	9	21	...	...	...	...	...	...				
63	University of Missouri, Medical Department, Columbia.†	9,662	34	...	...	...	...	17	35	70	70	...	...	C. M. Jackson, M.D., Dean	Sept. 21	June 13	63
64	Kansas City Hahnemann Medical College, Kansas City.—H. (k)	330,662	42	...	7	...	...	49	32	105	100	100	100	W. E. Cramer, M.D., Dean	Sept. 4	May 13	64
65	University Medical College, Kansas City (l)	330,662	140	...	36	...	...	...	...	...	...	...	...		.....	.....	65
66	Eclectic Medical University, Kansas City.—E. (m)	330,662	49	...	12	...	1	39	34	100	100	100	100	D. R. Alexander, M.D., Secretary	Sept. 4	May 19	66
67	Ensworth Medical College, St. Joseph	77,403	56	...	9	...	...	34	32	90	95	75	95	T. E. Potter, M.D., Secretary	Oct. 1	May 31	67
68	American Medical College, St. Louis	687,029	39	7	11	1	...	30	35	100	100	100	100	James Moores Ball, M.D., Dean	Sept. 4	May 31	68
69	Barnes Medical College, St. Louis	687,029	168	8	49	3	...	48	32	100	100	100	100	A. R. Kieffer, M.D., Dean	Sept. 14	May 13	69
70	St. Louis University, School of Medicine	687,029	274	...	50	...	14	89	35	120	120	120	120	E. P. Lyon, Ph.D., Dean	Oct. 2	May 29	70
71	St. Louis College of Physicians and Surgeons	687,029	46	6	17	5	...	47	30	105	100	100	105	Waldo Briggs, M.D., Dean	Sept. 18	May 6	71
72	Washington University, Medical Department, St. Louis	687,029	123	...	34	...	6	93	32	140	142	111	105	George Dock, M.D., Dean	Oct. 2	June 8	72
	NEBRASKA		281	21	96	6	6	...	...	...	...	...	...				
73	Creighton Medical College, Omaha	124,096	175	13	38	5	2	48	31	105	100	100	105	D. C. Bryant, M.D., Dean	Sept. 4	April 27	73
74	University of Nebraska, College of Medicine, Lincoln and Omaha	124,096	67	5	9	1	4	67	34	117	114	100	105	Robert H. Wolcott, M.D., Lincoln	Sept. 12	May 31	74
75	Lincoln Medical College.—E. (n)	43,973	39	3	9	...	...	37	34	90	90	90	90	F. L. Wilmeth, M.D., Dean	Sept. 6	May 20	75
	NEW HAMPSHIRE		42	...	11	...	5	...	...	...	...	...	...				
76	Dartmouth Medical School, Hanover	2,075	42	...	11	...	5	29	36	145	147	125	125	John M. Gile, M.D., Dean	Sept. 21	June 26	76
	NEW YORK		2231	75	495	18	76	...	...	...	...	...	...				
77	Albany Medical College, Albany	100,253	208	...	42	...	...	99	31	130	145	120	130	Willis G. Tucker, M.D., Registrar	Sept. 19	May 14	77
78	Columbia University, College of Phys. and Surgs., New York City	4,766,883	328	...	70	...	43	176	33	250	250	250	250	Samuel W. Lambert, M.D., Dean	Sept. 27	June 5	78
79	Cornell University Medical College, New York City	4,766,883	98	18	48	7	13	150	34	190	185	185	200	William M. Polk, M.D., Dean	Sept. 27	June 12	79
80	Eclectic Medical College of the City of New York.—E	4,766,883	63	14	17	...	1	43	32	160	150	150	160	Samuel A. Hardy, M.D., Dean	Sept. 14	May 14	80
81	Fordham University School of Medicine, New York City	4,766,883	94	...	17	...	...	69	35	200	200	200	200	James J. Walsh, M.D., Dean	Sept. 20	June 14	81
82	Long Island College Hospital, New York City	4,766,883	407	...	73	...	3	105	32	205	200	180	200	Joseph H. Raymond, M.D., Secretary	Sept. 28	June 3	82
83	New York Homeopathic Medical College and Hospital.—H	4,766,883	210	...	14	...	5	60	32	130	130	125	155	Royal S. Copeland, M.D., Dean	Oct. 5	June 1	83
84	New York Medical College and Hospital for Women.—H	4,766,883	...	24	...	4	...	50	32	155	150	135	155	Helen Cooley Palmer, M.D., Dean	Oct. 2	May 24	84
85	University and Bellevue Hospital Medical College, New York	4,766,883	510	...	68	...	3	174	33	205	200	200	200	Egbert Le Fevre, M.D., Dean	Sept. 27	June 5	85
86	Syracuse University, College of Medicine, Syracuse	137,249	102	7	27	2	5	60	33	181	191	151	166	John L. Heffron, M.D., Dean	Oct. 3	June 12	86
87	University of Buffalo, Medical Department, Buffalo	423,715	211	12	36	5	3	82	32	185	180	140	140	Matthew D. Mann, M.D., Dean	Sept. 25	May 31	87
	NORTH CAROLINA		319	2	46	...	4	...	...	...	...	...	...				
88	Leonard Medical School, Raleigh	19,218	120	...	24	...	2	14	29	52	52	52	62	Charles F. Meserve, LL.D., President	Sept. 28	May 9	88
89	University of North Carolina, Medical Department, Chapel Hill.†	1,200	51	...	...	...	...	32	34	114	116	...	...	Isaac Hall Manning, M.D., Dean	Sept. 14	June 4	89
90	North Carolina Medical College, Charlotte	34,014	110	2	22	...	2	35	30	97	95	80	105	W. O. Nisbet, M.D., Dean	Sept. 13	May 3	90
91	Wake Forest School of Medicine, Wake Forest.†	823	38	...	...	...	...	16	33	105	115	...	...	John Brewer Powers, M.D., Dean	Sept. 5	May 15	91
	NORTH DAKOTA		34	5	...	...	...	...	...	...	...	...	...				
92	Univ. of North Dakota, Med. Dept., University, Grand Forks.†	12,478	34	5	...	...	...	25	35	50	50	...	...	M. A. Brannon, A.B., Dean	Sept. 19	June 14	92
	OHIO		763	23	170	3	28	...	...	...	...	...	...				
93	College of Physicians and Surgeons, Cleveland (o)	560,663	60	4	20	2	1	...	...	...	...	...	...		.....	.....	93
94	Cleveland-Pulte Medical College, Cleveland.—H	560,663	72	9	13	...	...	59	32	125	125	125	125	George H. Quay, M.D., Dean	Sept. 21	May 11	94
95	Western Reserve University Medical Department, Cleveland	560,663	107	...	14	...	12	114	34	142	135	135	135	F. C. Waite, M.D., Secretary	Oct. 1	June 13	95
96	Eclectic Medical College, Cincinnati.—E	364,463	92	3	27	...	2	27	30	100	100	100	100	John K. Scudder, M.D., Secretary	Sept. 18	May 8	96
97	Ohio-Miami Medical College of the University of Cincinnati	364,463	145	4	38	...	10	117	33	125	125	125	125	Paul G. Woolley, M.D., Dean	Sept. 25	June 1	97
98	Starling-Ohio Medical College, Columbus	181,548	248	4	50	1	4	64	32	140	135	135	135	W. J. Means, M.D., Dean	Sept. 20	May 22	98
99	Toledo Medical College, Toledo	168,497	39	1	8	...	...	48	30	120	120	120	120	E. I. McKesson, M.D., Secretary	Oct. 2	May 24	99
	OKLAHOMA		57	6	13	2	...	...	...	...	...	...	...				
100	Univ. of Oklahoma, School of Med., Norman and Oklahoma City	64,205	57	6	13	2	...	40	35	50	30	100	105	Walter L. Capshaw, M.D., Secretary	Sept. 19	June 13	100
	OREGON		114	5	19	...	2	...	...	...	...	...	...				
101	University of Oregon, Medical Department, Portland	207,214	68	4	16	...	1	50	32	155	150	117	58	S. E. Josephi, M.D., Dean	Sept. 13	May 15	101
102	Willamette University, Medical Department, Salem	14,094	46	1	3	...	1	20	32	123	110	88	58	W. H. Byrd, M.D., Dean	Oct. 3	June 1	102
	PENNSYLVANIA		1910	123	453	38	81	...	...	...	...	...	...				
103	Hahnemann Medical College and Hospital, Philadelphia.—H	1,549,008	135	...	37	...	7	80	33	150	150	150	150	Wm. B. Van Lennep, M.D., Dean	Sept. 27	June 6	103
104	Jefferson Medical College, Philadelphia	1,549,008	559	...	117	...	12	130	33	186	182	181	180	James W. Holland, M.D., Dean	Sept. 25	June 3	104
105	Medico-Chirurgical College of Philadelphia	1,549,008	462	...	74	...	9	104	33	162	159	156	150	Seneca Egbert, M.D., Dean	Sept. 25	June 7	105
106	Temple University, Medical Department, Philadelphia	1,549,008	73	9	22	1	...	84	34	155	150	150	150	Frank C. Hammond, M.D., Dean	Sept. 15	June 3	106
107	University of Pennsylvania, Department of Medicine, Philadelphia	1,549,008	445	...	151	...	51	166	34	200	200	200	200	Allen J. Smith, M.D., Dean	Sept. 29	June 10	107
108	Woman's Medical College of Pennsylvania, Philadelphia	1,549,008	....	110	...	32	2	58	30	161	156	154	154	Clara Marshall, M.D., Dean	Sept. 21	May 2	108
109	University of Pittsburgh, Medical Department, Pittsburgh	533,905	236	4	52	3	...	102	34	235	220	155	160	Thomas S. Arbuthnot, M.D., Dean	Sept. 25	June 12	109
	PHILIPPINE ISLANDS		65	...	3	...	...	...	...	...	...	...	...				
110	University of the Philippines Coll. of Med. and Surg., Manila	219,928	65	...	3	...	...	45	36	...	...	...	...	Paul C. Freer, M.D., Dean	June 1	May 4	110
	SOUTH CAROLINA		201	2	48	1	7	...	...	...	...	...	...				
111	Medical College of South Carolina, Charleston	58,833	201	2	48	1	7	41	32	100	100	100	100	Robert Wilson, Jr., M.D., Dean	Oct. 2	June 3	111

TABLE 1.—STATISTICS OF MEDICAL COLLEGES IN THE UNITED STATES AND CANADA—(*Concluded*)

Number.	NAME AND LOCATION OF COLLEGE	Population of city where college is located. (Census of 1910.)	No. of students registered 1910-11. Men.	No. of students registered 1910-11. Women.	Graduates 1911. Men.	Graduates 1911. Women.	Grads. with A.B., B.S., or Ph.B.	No. of teachers.	Weeks in college year.	*Total fees. (Dollars.) 1st year.	*Total fees. (Dollars.) 2nd year.	*Total fees. (Dollars.) 3rd year.	*Total fees. (Dollars.) 4th year.	Executive Officer.	Session of 1911-12. Begins 1911.	Session of 1911-12. Ends 1912.	Number.
	SOUTH DAKOTA		7	...	...	...	...	...	...	...	...	...	...				
112	University of South Dakota, College of Medicine, Vermilion.†	2,147	7	...	...	...	...	9	34	60	00	...	...	Christian P. Lommen, B.S., Dean	Sept. 18	June 6	112
	TENNESSEE		1391	10	358	2	25	...	...	...	...	...	...				
113	Lincoln Memorial University Medical Department, Knoxville	36,346	97	4	22	2	1	32	28	100	100	100	125	S. L. Jones, M.D., Dean	Oct. 1	May 1	113
114	Meharry Medical College, Nashville	110,364	297	2	56	...	7	26	29	56	59	57	65	G. W. Hubbard, M.D., Dean	Sept. 13	April 24	114
115	Universities of Nashville and Tennessee, Dept. of Medicine (p)	110,364	192	...	63	...	4	...	...	...	...	...	...	.....	.....	.....	115
116	Vanderbilt University, Medical Department, Nashville	110,364	279	...	40	...	6	50	31	125	125	125	150	L. E. Burch, M.D., Secretary	Sept. 20	May 15	116
117	College of Physicians and Surgeons, Memphis (p)	131,105	113	3	22	...	2	...	...	...	...	...	...	.....	.....	.....	117
118	University of Tennessee, College of Medicine, Memphis (p)	131,105	...	...	...	...	...	40	30	125	125	125	150	E. C. Ellett, M.D., Dean	Sept. 13	May 7	118
119	Memphis Hospital Medical College, Memphis	131,105	379	...	97	...	4	43	30	125	125	125	150	Wm. B. Rogers, M.D., Dean	Oct. 2	May 18	119
120	University of West Tennessee, Medical Department, Memphis	131,105	34	1	8	...	1	16	30	50	50	50	60	M. V. Lynk, M.D., Dean	Sept. 14	May 1	120
	TEXAS		411	15	112	3	5	...	...	...	...	...	...				
121	Fort Worth School of Medicine, Fort Worth. (q)	73,312	89	1	27	1	...	49	30	114	113	108	125	W. R. Thompson, M.D., Dean	Sept. 25	May 16	121
122	University of Texas, Department of Medicine, Galveston	36,981	164	13	52	1	4	25	32	61	31	21	6	W. S. Carter, M.D., Dean	Oct. 2	May 31	122
123	Baylor University, College of Medicine, Dallas	92,104	89	1	17	...	...	25	30	105	100	100	125	Edward H. Carey, M.D., Dean	Oct. 2	May 21	123
124	Southwestern University Medical College, Dallas	92,104	69	...	17	...	1	32	31	110	105	100	125	John O. McReynolds, M.D., Dean	Oct. 1	May 25	124
	UTAH		18	1	...	...	...	...	...	...	...	...	...				
125	University of Utah, School of Medicine, Salt Lake City.†	92,777	18	1	...	...	...	19	34	55	55	...	...	Charles T. Vorhies, M.D., Dean	Sept. 18	June 1	125
	VERMONT		186	...	40	...	2	...	...	...	...	...	...				
126	University of Vermont, College of Medicine, Burlington	20,468	186	...	40	...	2	61	31	135	135	135	165	J. N. Jenne, M.D., Secretary	Oct. 30	June 27	126
	VIRGINIA		438	...	93	...	17	...	...	...	...	...	...				
127	Medical College of Virginia, Richmond	127,628	210	...	40	...	...	54	34	100	100	100	100	Christopher Tompkins, M.D., Dean	Sept. 12	May 29	127
128	University College of Medicine, Richmond	127,628	149	...	33	...	3	65	34	104	104	104	134	Alfred L. Gray, M.D., Dean	Sept. 12	May 24	128
129	University of Virginia, Department of Medicine, Charlottesville	6,765	79	...	20	...	14	33	36	150	150	150	150	R. H. Whitehead, M.D., Dean	Sept. 14	June 12	129
	WEST VIRGINIA		13	...	...	...	...	...	...	...	...	...	...				
130	West Virginia University College of Medicine, Morgantown. (r)	9,150	13	...	...	...	...	...	...	...	...	...	...	.....	.....	.....	130
	WISCONSIN		345	11	60	4	...	...	...	...	...	...	...				
131	Marquette University, Medical Department, Milwaukee	373,857	247	6	46	2	...	62	31	135	135	135	150	Warren B. Hill, M.D., Dean	Oct. 3	May 27	131
132	Wisconsin College of Physicians and Surgeons, Milwaukee	373,857	53	2	14	2	...	54	31	145	135	130	145	Thomas O. Phillips, M.D., Dean	Oct. 2	May 24	132
133	University of Wisconsin, College of Medicine, Madison.†	25,531	45	3	...	...	...	16	35	75	75	...	...	Charles R. Bardeen, M.D., Dean	Sept. 27	June 22	133
	CANADA		1625	7	340	2	15	...	...	...	...	...	...				
134	Dalhousie University, Faculty of Medicine, Halifax, N. S.	40,832	67	4	14	2	1	26	31	91	111	112	121	A. W. H. Lindsay, Secretary	Sept. 4	April 28	134
135	Queen's University, Faculty of Medicine, Kingston, Ontario	17,961	282	...	46	...	...	...	29	105	105	105	135	A. R. B. Williamson, M.D., Secretary	Sept. 13	April 24	135
136	Western University, Faculty of Medicine, London, Ont.	37,981	129	...	26	...	...	26	30	105	105	105	105	W. E. Waugh, M.D., Registrar	Sept. 12	April 30	136
137	McGill University, Medical Faculty, Montreal, Que.	353,007	308	...	31	...	13	100	33	160	148	154	154	John W. Scane, M.D., Registrar	Oct. 1	June 12	137
138	Laval University, Medical Faculty, Montreal, Que.	353,007	195	...	51	...	...	50	34	110	118	126	138	E. P. Lachapelle, M.D., Dean	Oct. 2	May 29	138
139	Laval University, Medical Faculty, Quebec, Que.	73,500	84	...	19	...	...	17	34	75	75	75	75	Michael J. Ahern, M.D., Dean	Sept. 12	June 19	139
140	University of Toronto, Medical Faculty, Toronto, Ont.	208,040	510	...	143	...	...	157	31	150	150	150	150	A. Primrose, M.D., Secretary	Sept. 30	May 17	140
141	University of Manitoba, Manitoba Medical College, Winnipeg	42,336	134	3	19	...	1	50	28	155	155	155	155	E. S. Popham, M.D., Registrar	Oct. 1	May 1	141
	MEXICO		322	8	58	...	...	...	...	...	...	...	...				
142	Escuela Nacional de Medicina, Mexico City	344,721	322	8	58	...	...	103	36	...	...	...	...	Fernando Zarraga, M.D., Dean	July 1	April 15	142

H., Homeopathic; E., Eclectic; Ph.M., Physiomedical. * Night schools. † Gives only two years of the medical course.

REFERENCES TO TABLE I.

(a) The College of Physicians and Surgeons of Little Rock has united with the University of Arkansas Medical Department and the consolidated school will be entirely controlled and financed hereafter by the University of Arkansas.

(b) Cooper Medical College will continue until the students enrolled at the time of its merger with the Leland Stanford University in 1908 have been graduated. It will then cease to exist and the Leland Stanford will teach all four years of the medical course.

(c) Formerly the College of Physicians and Surgeons. The school is now an integral part and entirely under the control of the University of Illinois.

(d) The College of Medicine and Surgery, the last of the physiomedical colleges, has been absorbed by the Chicago College of Medicine and Surgery.

(e) This college, which held its sessions at night, has been discontinued.

(f) The population figures given are for both Kansas City, Kansas, and Kansas City, Missouri.

(g) Flint Medical College has been temporarily suspended.

(h) The College of Physicians and Surgeons of Boston is not included in the list of medical colleges recognized by the Massachusetts Medical Society.

(i) The population figures given are for the adjoining cities of Minneapolis and St. Paul.

(j) This is the last medical class which will be graduated by the Hamline University Medical Department. Under the agreement whereby this school was merged with the University of Minnesota, College of Medicine and Surgery, the Hamline University was to grant degrees for all students enrolled at the time of the merger who were not eligible for the degree from the University of Minnesota.

(k) See note (f).

(l) This University Medical College has been permanently suspended.

(m) The Eclectic Medical University is said to be not in good standing with the Missouri State Board of Health.

(n) Last year an offshoot of the Lincoln Medical College was organized under the name of the Nebraska Medical College. They have been reunited, however, and will continue as the Medical Department of Cotner University.

(o) The College of Physicians and Surgeons of Cleveland has been merged into the Western Reserve University Medical Department but by the terms of the agreement will continue to grant degrees until all the students enrolled at the time of the merger, who were not eligible to receive the degree from Western Reserve, have been graduated.

(p) The union between the Medical Departments of the University of Nashville and the University of Tennessee has been dissolved, the former has ceased to exist and the latter has been moved to Memphis where it will occupy the building of the College of Physicians and Surgeons, with which it has been consolidated.

(p) The Medical Department of Fort Worth University has taken the title of Fort Worth School of Medicine and by affiliation has become the Medical Department of the Texas Christian University. Neither institution assumes any liability for the conduct or the expenses of the other.

(r) This college was closed by the Regents of West Virginia University at the end of the session of 1910-11.

(*Continued from page 641*)

Amended March 17, 1908, as follows:

(*b*) A diploma from an accredited high school . . . embracing not less than two years (4 points) [of Latin], two years (4 points) of mathematics, two years (4 points) of English, one year (2 points) of history, *one year (2 points) of physics*, and six years (12 points) of further credit in language, literature, history or science.

Amended March 21, 1910, as follows:

(*b*) A diploma from an accredited high school . . . embracing two years (4 points) of Latin, *or four years (8 points) of either high school French or German or its full equivalent, provided a satisfactory examination is passed in the elements of Latin grammar;* two years (4 points) of mathematics, two years (4 points) of English, one year (2 points) of history, one year (2 points) of physics, and six years (12 points) of further credit in language, literature, history or science.

(*c*) An examination in the following branches: A. Required, 18 points: Mathematics, 4 points; English, 4 points; History, 2 points; [Language (2 must be Latin), 4 points]; Science (taken from physics, chemistry, botany, zoology), 4 points.

B. Optional (to 12 points): English, 2 points; History, 6 points; Language, 6 points; Manual Training, 2 points; Mechanical Drawing, 1 point; Natural Science (botany, biology, zoology), 2 points; Physical Science (chemistry, physics), 2 points; Trigonometry, 1 point; Astronomy 1, Civics 1, Geology 1, Physical Geography 1, Physiology and Hygiene 1, Political Economy 1.

(One point in any subject in a high school or academic course demands not less than five periods per week of forty-five minutes each for eighteen weeks.)

Amended May 6, 1907, as follows:

(*c*) An examination in the following branches: A. Required, 18 points: Mathematics, 4 points; English, 4 points; History, 2 points; *Latin, 4 points;* Science (taken from physics, chemistry, botany, zoology), 4 points.

B. Optional: (Same as before.)

Amended March 17, 1908, as follows:

(*c*) An examination in the following branches, totaling 30 points:

A. Required, 16 points.	Points
Mathematics—(Minimum, 2 years; maximum, 3 years	4
Algebra and plain geometry.	
English—(Minimum, 2 years; maximum, 4 years)	4
(*a*) English grammar.	
(*b*) Rhetoric and composition.	
Latin—(Minimum, *see* (*b*); maximum, 4 years)	4
(*a*) Latin grammar.	
(*b*) Latin prose composition.	
(*c*) Reading four books of Cæsar or equivalent.	
Physics—(1 year). With laboratory work	2
History (1 year). Including civics and political economy	2
Total required	16

B. Elective, 14 points.	Points
English Language and Literature (2 years) Only if taken after the required English	4
Language—German, French, Spanish or Greek (4 years); not less than 1 year in any one *see* (*b*)	2
Advanced Mathematics—Solid Geometry and Trigonometry (½ year each)	1
Natural Science (1 year). Biology, 1 year, or Botany and Zoology, ½ year each	1
Physical Science—(1 year). Chemistry	1
Earth Science—Physical Geography and Geology, ½ year each	1
Physiology and Hygiene—(½ year)	½
Astronomy—(½ year)	½
Drawing—(½ year)	½

One point in any subject demands one period per week of not less than 45 minutes, for 18 weeks.

Two points equal 5 counts, or 1 unit, or 2 credits.

If only 4 hours per week are given in a subject, the year's work represents 4 counts (the minimum), and must be counted as such and not as 5 counts (the maximum).

(*d*) Certificates from reputable instructors [recognized by the superintendent hereinafter to be mentioned or] by any state board of medical examiners duly authorized by law, may be accepted in lieu of any part of this examination.

Amended March 19, 1906, as follows:

(*d*) Certificates from reputable instructors *recognized by any state board of medical examiners duly authorized by law or by the superintendents of public instruction in states not having a board of examiners,* may be accepted in lieu of any part of this examination.

Section 1 (e) was added May 21, 1910, as follows:

The university matriculation certificate of the members of the Association of American Universities may be accepted as a minimum requirement for admission.

Section 1 (d) and (e) were eliminated Feb. 28, 1911.

SEC. 2.—This examination must be conducted by or under the authority of the superintendent of public instruction [of the city or] state in which the college is located. In no case shall it be conducted by any person connected with the faculty, medical or otherwise, of the institution to which the student is seeking admission.

Amended March 19, 1906, as follows:

SEC. 2.—This examination must be conducted by or under the authority of the *board of examiners* or of the superintendent of public instruction of [the city or] state in which the college is located. In no case shall it be conducted by any person connected with the faculty, medical or otherwise, of the institution to which the student is seeking admission.

Amended March 21, 1910, as follows:

This examination must be conducted by or under the authority of the board of examiners [or of the superintendent of public instruction] of the state in which the college is located [*as provided for in Sec. 1, (d).*] In no case, etc. (same as before).

Amended Feb. 28, 1911, as follows:

SEC. 2.—This examination must be conducted by or under the authority of the board of *medical* examiners of the state in which the college is located, *or by a duly authorized examiner of the college entrance examination board, or the authorized examiner of an accredited university, state or otherwise, or by an examiner whose certificates are accepted by accredited colleges or universities, or by a method approved by the judicial council of this association.*

SEC 3.—A student may be allowed to enter on his medical work conditioned in not more than six points, and these conditions must be removed by satisfactory examination before he is allowed to enter on the second year of his medical course.

By an amendment adopted Feb. 28, 1911, to become effective on and after Jan. 1, 1912, no entrance conditions are to be permitted, and Section 3 is re-worded to cover another subject, as follows:

SEC. 3.—The term "accredited" as applied to high schools, academies, colleges and universities means institutions of that type that have been investigated and are accredited by the state university of their respective states, by the North Central Association of Colleges and Secondary Schools, the Association of Colleges and Preparatory Schools of the Southern States, the Association of Colleges and Preparatory Schools of the Middle States and Maryland, the New England College Entrance Certificate Board, the Association of American Universities and the Association of State Universities, provided that such accrediting is based on Article III, Section 1, of this constitution.

SEC 4.—Colleges in membership in this Association may honor the official credentials presented by students from other colleges having the standard requirements maintained by members of this Association, excepting for the fourth year of the course, but no member of this Association shall admit a student to advanced standing without first communicating with the college from which such student desires to withdraw, and receiving from the dean of such college a direct written communication certifying to the applicant's [professional and moral qualifications, and to the exact work he has done in said college.]

Amended Feb. 28, 1911, to read:

Colleges in membership . . . without . . . receiving from the dean, *secretary or registrar* of such college a direct written communication certifying to the applicant's *standing. Credit for time or scholarship cannot be given beyond that of the college issuing the credentials, except by mutual agreement between the colleges.*

SEC. 5.—Candidates for the degree of Doctor of Medicine shall have attended four courses of study in four calendar years, each annual course to have been of not less than thirty (changed to *thirty-two* by amendment adopted March 21, 1910) teaching weeks' duration, and at least ten months shall intervene between the beginning of any course and the beginning of the preceding course.

SEC. 6.—Credit may be given to the holder of a Bachelor's degree from an approved college or university for any work in the medical branches which he has successfully completed in his college course, only so far as it is the full equivalent of corresponding work in the medical curriculum. The holder of such Bachelor's degree may also be given time credits of not exceeding one year, provided that such student has had at least 40 hours in physics, 144 hours in chemistry, 24 hours in osteopathy, 292 hours in human or comparative anatomy, 124 hours in histology, 85 hours in embryology, 145 hours in physiology and 46 hours in materia medica, provided that the applicant for such time credits satisfies the professors of the chairs mentioned in the medical school as to his proficiency in these first-year medical studies, and satisfies the examiner, as provided for in Section 2, Article III, that his studies for which the degree was conferred include the above requirements. Such student may be allowed to complete a course for the medical degree in not less than 31 months, provided he completes the remainder of the medical curriculum in that time.

This section was amended May 6, 1907, to read as follows:

SEC. 6.—No time credit shall be given to holders of a Bachelor's degree, but subject credit may be given on satisfactory examination. Four years of residence in a medical college shall be required of all candidates for the degree of Doctor of Medicine.

SEC 7.—A college which gives less than a four years' course of study, but does not graduate students, and is possessed of other required qualifications, may be admitted to membership.

SEC. 8.—Each student shall be obliged to attend 80 per cent. of the exercises in every annual course of study for which he seeks credit. No student shall be given credit on examination unless he attains a grade of at least 70 per cent. or its equivalent in any other marking system. And no student shall be graduated unless he shall have attained a passing grade in each and all subjects of the required curriculum.

This section was amended Feb. 28, 1911, by inserting in the first line, after the word "attend," "*not less than.*"

ARTICLE V.

SECTION 1.—The entire course of four years shall consist of at least 4,000 hours, divided into the subjects as shown in the following table, and no college shall be recognized that falls below this standard over 20 per cent. in any one branch or over 10 per cent in the total. Laboratory or clinic hours may be substituted for didactic hours.

(*Continued on page 648*)

Number.	NAME OF COLLEGE	1 Alabama 549	2 Arizona 10	3 Arkansas 307	4 California 356	5 Colorado 143	6 Connecticut 243	7 Delaware 34	8 Dist. of Columbia 131	9 Florida 107	10 Georgia 710	11 Idaho 25	12 Illinois 1566	13 Indiana 503	14 Iowa 499	15 Kansas 341	16 Kentucky 359	17 Louisiana 329	18 Maine 151	19 Maryland 291	20 Massachusetts 819	Number.
1	Birmingham Medical College, Birmingham	182								6	3						1					1
2	University of Alabama, Medical Dept., Mobile	140	1							2	1											2
3	College of Physicians and Surgeons, Little Rock		1	75						2	2		3			1		6				3
4	University of Arkansas, Med. Dept., Little Rock			83	1								1	1			1	3				4
5	College of Phys. and Surgs., San Francisco				12									2		1					1	5
6	Hahnemann Medical College of the Pacific.—H.*				33																	6
7	Leland Stanford Junior University, Dept. of Med.				14									1								7
8	Cooper Medical College, San Francisco				57																	8
9	Univ. of California, Med. Dept., San Francisco				51								1	1								9
10	Univ. of California, Med. Dept., Los Angeles				31																	10
11	California Eclectic Med. Coll., Los Angeles.—E				22	1																11
12	College of Physicians and Surgeons, Los Angeles		2		17	1	1		1				7	2	14	4	1				4	12
13	Oakland College of Med. and Surgery, Oakland				18											1						13
14	College of Medical Evangelists, Loma Linda				10	2							1	2	1	1						14
15	University of Colorado, School of Med., Boulder	1				89	1			1		3	1	4	14	3	1	1			2	15
16	Yale Medical School, New Haven						53									1			2		3	16
17	George Washington University, Dept. of Med.				2		1		30				2			1			1	3	3	17
18	Georgetown Univ., School of Med., Washington	1			2		7		39	1			2				3		1	4	18	18
19	Howard University, School of Med., Washington	3		2			1	2	34	5	6		3				1	3		12	2	19
20	Atlanta College of Phys. and Surgs., Atlanta	27			1	1				36	199							1				20
21	Atlanta School of Medicine, Atlanta	13								14	154							2			1	21
22	Georgia College of Eclectic Med. and Surg.—E	5								7	63											22
23	Hospital Medical College, Atlanta.—E.*			3						9	42											23
24	Medical College of Georgia, Augusta						1			8	109											24
25	Bennett Medical College, Chicago.*			1		1	1			1			153	12	17	3	2				1	25
26	Chicago College of Medicine and Surgery	7	1	4	2		2			1			288	51	21	11	5		2		6	26
27	College of Physicians and Surgeons, Chicago	1		1		4			1	1		2	263	31	21	8		1			1	27
28	College of Medicine and Surgery, Chicago.—Ph.M.				1								22	3	4		1					28
29	Hahnemann Med. Coll. and Hosp., Chicago.—H.				2	1						1	53	7	16	2	4				3	29
30	Hering Medical College, Chicago.—H.			1	2								17	2			5					30
31	Jenner Medical College, Chicago.*			1					1		1		91	2	2		2				1	31
32	Northwestern University Medical School, Chicago		1	1	4	8					1		149	16	38	10		1				32
33	Reliance Medical College												105									33
34	Rush Medical College, Chicago	1		6	4	2				1		5	154	26	34	18	1	3			2	34
35	Indiana University, School of Med., Indianapolis			1									2	180								35
36	Drake University, College of Med., Des Moines				1							1	2		52							36
37	State Univ. of Iowa, Coll. of Med., Iowa City												3		104		1					37
38	State Univ. of Iowa, Coll. of Homeo. Med.—H.														15							38
39	Kansas Medical College, Topeka			1												46						39
40	Univ. of Kansas, School of Med., Kansas City									1					1	76						40
41	Louisville National Medical College, Louisville																25					41
42	University of Louisville, Med. Dept., Louisville	4		7		1				2	5		13	65	2	5	178	7				42
43	Flint Medical College, New Orleans												1					6				43
44	Tulane University, Medical Dept., New Orleans	45		9			1			10	9			1				166	1		1	44
45	Medical School of Maine, Portland				2		2												56		4	45
46	Baltimore Medical College, Baltimore	2		1			10		1	2								1	5	24	19	46
47	College of Physicians and Surgeons, Baltimore	1			1		28	3	1	1	4									37	21	47
48	Johns Hopkins Univ., Med. Dept., Baltimore	7		4	13		15		5	2	16	1	11	7	7	1	15	5	4	48	11	48
49	Maryland Medical College, Baltimore	1					8	1	3		1			2						25	7	49
50	Univ. of Maryland, School of Med., Baltimore						5	7	1	8	8			1		1		1	2	122	3	50
51	Boston University, School of Medicine.—H.						1												4		59	51
52	College of Physicians and Surgeons, Boston						3		1	3					1				8		102	52
53	Harvard Medical School, Boston			1	12	5	5		1				4	2	3	3	2		17		133	53
54	Tufts College Medical School, Boston						11						1		1				17		301	54
55	Detroit College of Medicine, Detroit													2								55
56	Detroit Homeopathic College, Detroit.—H.																					56
57	Univ. of Michigan, Dept. of Med. and Surg.	2		1	5	2			1		4	1	7	9	7		3		1		2	57
58	Univ. of Michigan, Homeo. Coll., Ann Arbor.—H.								1				1	2	1	1		1	1	2	1	58
59	Univ. of Minnesota, Coll. of Med. and Surg.					1						1	3		2	1						59
60	University of Mississippi, Med. Dept., Oxford																	1				60
61	Mississippi Medical College, Meridian	8									2							3				61
62	University of Missouri, Med. Dept., Columbia														1						2	62
63	Kansas City Hahnemann Med. Coll.—H.*												1	1	1	18						63
64	University Medical College, Kansas City			3	1	2			2						2	57						64
65	Eclectic Medical University, Kansas City.—E			1									7	1	4	10	1					65
66	Ensworth Medical College, St. Joseph			1								1			2	7						66
67	American Medical College, St. Louis.—E			2									11	1	1	2	2					67
68	Barnes Medical College, St. Louis.*			3		2							56	9	7	4	7				1	68
69	St. Louis University, School of Medicine		1	1	1	3	1				1		72	6	14	6						69
70	St. Louis College of Physicians and Surgeons			1									10	1	2		1					70
71	Washington University, Med. Dept., St. Louis			1	1								23	3	2	6						71
72	John A. Creighton Medical College, Omaha				2	2	2					2	2		43	4					1	72
73	University of Nebraska, College of Medicine					1									9	1						73
74	Lincoln Medical College, Lincoln.—E.*														1	1						74
75	Dartmouth Medical School, Hanover						3						1						3		10	75
76	Albany Medical College, Albany																				13	76
77	Columbia Univ., Coll. of Phys. and Surg.	2			2	2	7		1		2		2	1			1		3		7	77
78	Cornell Univ., Medical College, New York City				3									2	1					1	2	78
79	Eclectic Med. Coll. of the City of New York.—E.						1															79
80	Fordham Univ. School of Med., New York City				1		4	1													1	80
81	Long Island College Hospital, New York City						12														1	81
82	New York Med. Coll. and Hosp. for Women.—H.																				1	82
83	New York Homeo. Med. Coll. and Hosp.—H.				2		6		2		2		1							2	1	83
84	Univ. and Bellevue Hosp. Med. Coll., New York	1			2	1	5			3			4		1		2				5	84
85	Syracuse University, Coll. of Med., Syracuse				1			1							1							85
86	University of Buffalo, Medical Dept., Buffalo						1						1	1								86
87	Leonard Medical School, Raleigh	4								2	5									1	1	87
88	University of North Carolina, Med. Dept.																					88
89	North Carolina Medical College, Charlotte					1																89
90	Wake Forest School of Medicine, Wake Forest																					90
91	University of North Dakota, Med. Dept.																					91
92	Cleveland-Pulte Med. College, Cleveland.—H.												1	1								92
93	Western Reserve Univ., Med. Dept., Cleveland	1				1							3	5	1	1						93
94	Eclectic Medical College, Cincinnati.—E.			4							4		4	10		1	5					94
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

Number.	21 Michigan.....407	22 Minnesota.....313	23 Mississippi.....495	24 Missouri.....620	25 Montana.....27	26 Nebraska.....371	27 Nevada.....4	28 New Hampshire...84	29 New Jersey.....455	30 New Mexico.....11	31 New York.....2102	32 North Carolina..467	33 North Dakota....96	34 Ohio.....869	35 Oklahoma.....171	36 Oregon.....111	37 Pennsylvania...1709	38 Rhode Island....105	39 South Carolina...379	40 South Dakota.....87	41 Tennessee.....550	42 Texas.....704	43 Utah.....77	44 Vermont.....96	45 Virginia.....445	46 Washington.....88	47 West Virginia....220	48 Wisconsin.....459	49 Wyoming.....11	50 Philippine Is., Etc.89	51 Foreign.....579	52 Totals.....19,786	Number.
1	1	....	4	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	1	....	1	....	....	....	1	....	....	....	....	....	5	207	1
2	....	....	8	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	154	2
3	....	....	5	3	....	....	....	....	....	....	....	....	....	1	7	....	1	....	....	....	4	13	....	....	....	....	....	....	....	....	2	127	3
4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	9	....	....	....	....	....	....	4	....	....	....	....	....	....	....	....	1	104	4
5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	5	23	5
6	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	34	6
7	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	16	7
8	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	60	8
9	....	....	....	....	....	....	*1	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	1	....	....	....	2	59	9
10	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	....	....	....	....	....	....	....	....	....	33	10
11	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	24	11
12	1	4	....	9	....	4	....	1	1	....	3	....	....	3	....	1	4	....	....	....	1	1	....	....	....	....	2	5	....	....	14	108	12
13	1	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	21	13
14	1	1	....	....	1	2	....	....	....	....	3	....	....	1	....	1	....	....	....	1	....	1	....	....	....	2	....	1	....	....	7	39	14
15	2	2	....	2	....	3	....	1	....	....	2	....	....	3	1	1	....	....	....	2	2	1	2	1	1	1	1	, 1	....	3	152	15
16	....	....	....	1	....	....	....	....	2	....	4	....	....	5	1	1	4	2	....	1	....	2	3	....	....	....	....	....	....	1	83	16
17	1	2	....	....	....	1	....	1	....	....	3	2	2	3	1	....	4	....	2	....	2	1	....	....	15	1	3	1	....	....	8	98	17
18	....	....	1	....	....	....	....	1	5	....	4	1	....	2	1	....	11	8	....	....	....	....	....	....	1	1	4	....	....	4	9	131	18
19	....	1	2	3	1	....	....	....	4	....	10	5	1	7	....	....	6	3	5	....	3	6	....	....	29	....	....	....	....	....	33	193	19
20	....	....	12	....	....	....	....	....	....	....	5	4	....	....	....	....	1	....	26	....	3	2	....	....	....	....	....	....	....	....	2	320	20
21	....	....	11	1	....	....	....	....	....	....	....	7	....	1	....	....	1	....	7	....	6	....	....	....	....	....	....	....	....	....	1	219	21
22	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	....	....	....	....	....	....	....	....	2	81	22
23	....	....	....	....	....	....	....	....	....	....	....	1	....	....	2	....	....	....	3	....	2	3	....	....	....	....	....	....	....	....	....	65	23
24	....	1	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	15	....	1	....	....	....	....	....	....	....	....	....	....	136	24
25	12	3	2	3	....	....	....	....	....	....	9	2	2	3	....	....	10	....	....	6	4	3	....	....	....	1	....	24	....	....	11	282	25
26	14	15	3	24	1	3	....	1	5	5	28	....	6	23	1	1	34	....	1	6	4	8	1	....	2	2	6	10	....	3	25	630	26
27	23	21	....	8	5	4	....	....	....	....	4	....	7	6	....	1	2	1	....	14	....	1	3	....	2	9	1	30	....	3	26	506	27
28	....	....	1	1	....	....	....	....	....	....	4	....	....	2	....	....	....	....	....	....	3	1	....	....	....	....	....	1	....	....	6	49	28
29	3	....	....	....	....	....	....	....	....	....	1	....	1	2	....	....	1	1	....	....	....	1	....	....	2	1	1	2	....	....	2	107	29
30	1	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	....	....	8	49	30
31	1	2	....	1	....	....	....	....	....	....	2	....	....	2	1	....	....	....	....	....	....	2	....	....	....	....	....	3	....	....	2	117	31
32	8	28	....	5	3	9	....	....	....	1	2	....	5	12	2	6	1	....	....	14	1	....	18	....	2	5	1	32	1	2	10	397	32
33	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	105	33
34	7	8	1	16	2	14	....	....	1	1	3	1	7	22	3	5	1	2	....	10	4	4	14	1	3	6	....	24	1	....	8	426	34
35	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	1	188	35
36	....	2	....	3	1	2	....	....	....	....	1	....	1	....	....	1	....	....	....	1	....	1	....	....	....	1	....	....	....	....	2	72	36
37	1	3	....	....	1	....	....	....	....	....	....	....	1	....	....	....	....	....	....	2	....	....	....	....	....	1	....	1	....	....	....	118	37
38	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	18	38
39	....	....	....	1	....	2	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	52	39
40	....	....	....	6	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	85	40
41	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	25	41
42	2	7	14	8	....	1	....	....	3	1	3	5	3	7	6	....	17	....	1	....	15	18	....	....	6	1	37	1	....	....	4	447	42
43	....	....	3	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	1	14	43
44	1	....	64	1	....	....	....	....	....	....	....	6	....	....	7	....	....	....	4	....	4	44	....	....	....	....	....	....	....	....	5	379	44
45	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	67	45
46	....	....	....	....	....	....	....	6	13	....	23	3	....	4	....	....	41	4	2	....	....	....	....	1	8	....	13	....	....	....	22	205	46
47	....	....	1	....	....	....	....	....	18	....	16	2	....	4	....	....	50	13	....	1	....	....	7	....	4	....	58	....	....	....	18	289	47
48	....	1	....	6	....	2	....	3	4	....	28	9	1	11	....	5	34	1	4	3	3	9	....	2	18	7	7	11	1	....	5	347	48
49	....	....	....	....	....	....	....	1	16	....	5	4	....	2	....	....	37	5	3	....	1	1	....	....	11	....	22	....	....	7	5	167	49
50	1	....	1	....	....	....	....	1	11	....	13	41	....	....	2	....	24	4	30	....	1	1	....	....	15	....	3	....	....	4	13	324	50
51	....	....	....	....	....	1	....	2	1	....	2	....	....	....	....	....	1	2	....	....	....	....	....	1	1	....	....	....	....	....	11	86	51
52	....	1	1	....	....	....	....	9	4	....	8	2	....	1	....	....	4	9	2	....	....	1	....	....	1	....	....	....	....	....	37	198	52
53	....	1	....	4	1	2	....	3	2	....	13	....	1	7	....	3	8	12	1	1	....	....	....	1	....	3	....	....	2	2	9	264	53
54	....	....	....	....	....	....	....	13	....	1	6	....	....	1	....	....	1	18	....	....	....	....	....	1	....	....	....	....	....	....	7	379	54
55	134	1	....	....	....	....	....	....	....	....	3	....	....	4	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	17	163	55
56	16	....	....	....	....	....	....	....	....	....	2	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	21	56
57	114	1	....	3	1	....	1	....	3	....	28	....	1	29	....	2	11	....	3	3	1	....	....	....	1	....	4	....	2	....	3	4	260	57
58	34	2	....	....	1	....	....	....	....	....	20	....	....	8	....	3	9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	92	58
59	....	152	....	....	....	....	....	....	....	....	....	....	9	....	....	....	....	....	....	2	....	1	....	....	....	3	....	2	....	....	1	178	59
60	....	....	49	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	50	60
61	....	....	79	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	....	....	....	....	....	....	....	....	....	95	61
62	....	....	....	29	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	34	62
63	....	....	....	18	....	....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	42	63
64	....	....	....	55	....	2	....	....	....	1	....	....	....	1	12	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	140	64
65	....	....	....	16	....	2	....	....	....	....	....	....	....	....	1	....	....	....	....	2	....	....	2	....	....	....	....	....	....	1	1	49	65
66	....	....	....	43	....	1	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	56	66
67	....	1	....	17	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	6	46	67
68	1	2	1	61	....	6	....	....	....	....	1	....	....	3	....	....	1	....	....	....	4	....	....	....	....	....	1	1	....	1	4	176	68
69	5	3	....	125	1	2	....	....	....	....	3	1	....	4	4	1	3	....	....	....	....	1	....	....	....	3	....	6	....	....	6	274	69
70	....	....	....	16	....	....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	....	5	....	....	....	....	....	....	....	....	5	52	70
71	1	....	....	80	....	1	....	....	....	....	....	....	....	1	....	....	....	....	....	....	1	1	....	....	....	1	....	1	....	....	....	123	71
72	2	3	....	6	....	99	....	....	....	....	1	....	2	....	....	1	3	....	....	8	....	1	1	....	....	....	1	2	....	....	188	72
73	....	....	....	....	....	60	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	72	73
74	....	....	....	....	....	37	....	....	....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	....	....	....	....	1	....	....	....	42	74
75	....	....	....	....	1	....	....	16	3	....	1	....	....	....	....	....	....	....	....	....	....	....	....	4	....	....	....	....	....	....	....	42	75
76	....	....	....	....	....	....	....	....	2	....	190	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	1	....	208	76
77	....	....	5	2	....	....	....	3	42	....	203	1	1	3	2	3	13	1	4	....	....	2	1	2	1	3	....	....	....	....	6	328	77
78	....	....	....	....	1	....	....	....	13	....	84	2	....	1	1	....	1	....	....	1	1	....	....	....	....	....	....	....	....	....	1	1	116	78
79	....	....	....	....	....	....	....	....	4	....	69	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	77	79
80	1	....	....	....	....	....	....	....	8	....	49	....	....	....	....	....	3	1	....	....	....	....	....	....	1	....	....	....	....	....	24	94	80
81	....	....	....	....	....	....	....	....	20	....	369	1	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	3	407	81
82	....	....	....	....	....	....	....	....	3	....	19	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	24	82
83	....	....	....	1	....	....	....	1	23	....	142	....	1	....	....	1	4	1	....	....	1	1	....	2	....	....	....	1	....	....	5	210	83
84	....	1	....	....	....	....	....	1	87	....	371	....	....	3	1	....	4	1	4	....	2	1	....	1	2	1	....	1	....	2	7	510	84
85	....	....	....	....	....	....	....	....	1	....	99	....	....	1	....	....	1	....	....	....	....	....	....	....	....	....	....	1	....	1	2	109	85
86	1	....	....	....	....	....	....	....	....	....	203	....	....	1	....	....	11	....	....	....	....	1	....	....	....	....	....	....	....	....	3	223	86
87	....	....	2	....	....	....	....	4	....	....	1	46	....	....	....	....	3	....	17	....	....	3	....	....	20	....	....	....	....	....	11	120	87
88	....	....	....	....	....	....	....	....	....	....	....	48	....	....	....	....	1	....	2	....	....	....	....	....	....	....	....	....	....	....	....	51	88
89	....	....	....	....	....	....	....	....	....	....	1	99	....	....	....	....	1	....	8	....	....	....	....	....	....	....	....	....	....	....	2	112	89
90	....	....	....	....	....	....	....	....	....	....	....	34	....	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	38	90
91	....	2	....	....	....	....	....	....	....	....	....	....	33	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	....	....	2	39	91
92	1	....	....	....	....	....	....	....	....	....	2	....	....	55	....	....	19	....	1	....	....	....	....	....	1	....	....	....	....	....	....	81	92
93	1	1	1	....	1	1	....	....	....	....	2	....	....	139	....	....	8	....	....	....	....	....	1	....	....	....	1	1	....	....	2	171	93
94	....	....	....	4	....	....	....	1	....	....	1	....	....	40	1	....	9	....	....	....	1	1	....	....	....	1	6	....	....	....	....	95	94
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	

Number.	NAME OF COLLEGE	1 Alabama.....549	2 Arizona.....10	3 Arkansas.....307	4 California.....350	5 Colorado.....143	6 Connecticut.....248	7 Delaware.....34	8 Dist. of Columbia.131	9 Florida.....167	10 Georgia.....710	11 Idaho.....25	12 Illinois.....1566	13 Indiana.....503	14 Iowa.....480	15 Kansas.....341	16 Kentucky.....359	17 Louisiana.....329	18 Maine.....151	19 Maryland.....291	20 Massachusetts.....819	Number.
95	Ohio-Miami Med. Coll. of the Univ. of Cincinnati	....	....	....	....	....	....	....	1	....	....	....	....	5	....	1	17	....	....	....	....	95
96	Starling Ohio Medical College, Columbus	....	....	....	....	....	....	....	....	1	....	....	1	3	1	....	1	....	....	....	....	96
97	Toledo Medical College, Toledo	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	97
98	University of Oklahoma, School of Med., Norman	....	....	....	....	....	1	....	....	....	....	....	....	1	....	2	....	....	....	....	....	98
99	University of Oregon, Medical Dept., Portland	....	....	1	....	....	....	....	....	....	....	1	3	3	2	3	....	....	2	....	1	99
100	Willamette University, Medical Dept., Salem	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	100
101	Hahnemann Med. Coll. and Hosp., Phila.—H	....	....	....	2	....	1	2	....	....	....	....	....	....	2	....	2	....	1	1	....	101
102	Jefferson Medical College, Philadelphia	3	....	3	1	1	10	9	....	2	5	2	3	7	9	6	5	....	2	1	10	102
103	Medico-Chirurgical College of Philadelphia	1	....	....	2	....	5	2	....	....	....	....	2	....	....	....	....	1	1	1	3	103
104	Temple University, Medical Dept., Philadelphia.*	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	104
105	University of Pennsylvania, Dept. of Medicine	1	2	2	2	3	2	6	2	2	3	1	1	5	....	2	5	3	2	2	6	105
106	Woman's Med. Coll. of Pennsylvania, Phila	....	....	1	2	2	2	....	1	....	....	....	....	....	2	1	....	2	3	1	4	106
107	University of Pittsburgh, Med. Dept	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	107
108	Medical College of South Carolina, Charleston	....	....	....	....	....	....	....	....	11	4	....	....	....	....	....	....	....	....	....	1	108
109	Univ. of South Dakota, Coll. of Med., Vermilion	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	109
110	Lincoln Memorial Univ., Med. Dept., Knoxville	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	8	....	....	....	....	110
111	Meharry Medical College, Nashville	16	....	14	....	1	....	....	....	5	34	....	....	2	....	6	6	12	....	....	....	111
112	Univ. of Nashville and Tennessee, Dept. of Med	15	....	6	....	....	1	....	....	5	4	....	1	....	....	....	12	14	....	....	1	112
113	Vanderbilt University, Med. Dept., Nashville	24	....	8	6	....	....	....	....	7	5	....	3	....	1	1	30	8	....	....	1	113
114	College of Physicians and Surgeons, Memphis	2	....	6	....	....	....	....	1	....	3	....	1	....	....	....	1	3	....	....	1	114
115	Memphis Hospital Medical College, Memphis	16	....	39	1	1	....	....	....	....	3	....	2	....	....	....	3	68	....	....	....	115
116	Univ. of West Tennessee, Med. Dept., Memphis	1	....	2	....	....	....	....	....	3	....	....	....	....	....	....	....	2	....	....	....	116
117	Fort Worth University, Med. Dept., Fort Worth	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	117
118	University of Texas, Dept. of Med., Galveston	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	118
119	Baylor University, College of Medicine, Dallas	....	....	1	....	....	....	....	....	1	....	....	....	....	....	1	....	1	....	....	....	119
120	Southwestern University Medical College, Dallas	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	120
121	Univ. of Utah, Dept. of Med., Salt Lake City	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	121
122	Univ. of Vermont, Coll. of Med., Burlington	....	....	....	....	21	....	....	....	....	....	1	....	....	....	....	....	12	....	30	....	122
123	Medical College of Virginia, Richmond	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	....	2	....	....	123
124	University College of Medicine, Richmond	2	1	....	....	....	....	....	....	1	2	....	....	....	....	....	....	....	....	....	....	124
125	Univ. of Virginia, Dept. of Med., Charlottesville	7	....	3	....	....	....	....	....	1	2	....	....	....	....	....	....	....	1	2	....	125
126	West Virginia Univ., Coll. of Med., Morgantown	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	126
127	Marquette University, Med. Dept., Milwaukee	....	....	....	1	....	....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	127
128	Wisconsin Coll. of Phys. and Surgs., Milwaukee	....	....	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	....	128
129	University of Wisconsin, Coll. of Med., Madison	....	....	....	....	....	1	....	....	....	....	....	5	....	....	....	....	....	1	1	....	129
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

H., Homeopathic; E., Eclectic; P., Panpathic; * Total exact; distribution based on that of 1909-10.

(*Continued from page 645*)

CURRICULUM

	No. of Hours of Lectures.	Hours of Laboratory.	Hours of Clinics.	Total.
Histology	30	60	..	90
Embryology	30	60	..	90
Osteology	30	..	..	30
Anatomy	190	230	..	420
Physiology	180	120	..	300
Chemistry and Toxicology	100	200	..	300
Materia Medica	40	20	..	60
Pharmacology	40	20	..	60
Therapeutics	90	..	..	90
Bacteriology	40	100	..	140
Pathology	100	140	..	240
Medical Zoology, Post Mortem Work and Clinical Microscopy	30	60	..	90
Physical Diagnosis	20	..	80	100
Practice of Medicine	180	..	360	540
Surgery	180	..	360	540
Obstetrics	100	..	60	160
Gynecology	50	..	110	160
Pediatrics	40	..	60	100
Eye and Ear	30	..	30	60
Nose and Throat	30	..	30	60
Mental and Nervous Diseases	60	..	60	120
Electro-Therapeutics	20	..	40	60
Genito-Urinary Diseases	30	..	30	60
Dermatology and Syphilis	20	..	20	40
Hygiene and Public Health	30	..	..	30
Dietetics	30	..	..	30
Medical Jurisprudence	30	..	..	30
	1,750	1,010	1,240	4,000

Art. V, Sec. 1, was eliminated Feb. 28, 1911, and the following was substituted:

ART. V. SECTION 1.—The entire course of four years shall consist of at least 4,000 hours for each student, and shall be grouped in divisions and subdivided into subjects; each division and subject to be allotted the number of hours as shown in the following schedule:

DIVISION 1.—ANATOMY, 710 Hours (18 Per Cent.)

	Hours.	Lect. Rec. Dem.	Lab. Wk.
(a) Gross anatomy (including applied anatomy)	510	120	390
(b) Histologic and microscopic anatomy	135	30	105
(c) Embryology	75	30	45

DIVISION 2.—PHYSIOLOGY AND CHEMISTRY, 600 Hours (15 Per Cent.)

	Hours.	Lect. Rec. Dem.	Lab. Wk.
(a) Inorganic chemistry	180	60	120
(b) Organic chemistry	75	30	45
(c) Physiologic chemistry	104	30	75
(d) Physiology	240	140	100

DIVISION 3.—PATHOLOGY, BACTERIOLOGY AND HYGIENE, 450 Hours (11.25 Per Cent.)

	Hours.	Lect. Rec. Dem.	Lab. Wk.
(a) Racteriology	135	30	105
(b) Hygiene and general dietetics	45	45	...
(c) Pathology	270	60	210

DIVISION 4.—PHARMACOLOGY, MATERIA MEDICA AND THERAPEUTICS, 240 Hours (6 Per Cent.)

	Hours.	Lect. Rec. Dem.	Lab. Wk.
(a) Pharmacology	105	40	65
(b) Materia medica and pharmacology	80	...	...
(c) Therapeutics	55	...	...

DIVISION 5.—MEDICINE AND MEDICAL SPECIALTIES, 970 Hours (24.25 Per Cent.)

	Hours.	Lect. Rec. Dem.	Lab. Wk.
(a) General medicine (including clinical microscopy)	640	...	...
(b) Pediatrics	150	...	...
(c) Nervous and mental diseases	105	...	...
(d) Jurisprudence, ethics and economics	30	...	...
(e) Dermatology and syphilis	45	...	...

DIVISION 6.—SURGERY AND SURGICAL SPECIALTIES, 720 Hours (18 Per Cent.)

	Hours.	Lect. Rec. Dem.	Lab. Wk.
(a) General surgery	510	...	...
(b) Orthopedic surgery	45	...	...
(c) Genito-urinary diseases	45	...	...
(d) Eye	60	...	...
(e) Ear, nose and throat	60	...	...

DIVISION 7.—OBSTETRICS AND GYNECOLOGY, 300 Hours (7.5 Per Cent.)

	Hours.	Lect. Rec. Dem.	Lab. Wk.
(a) Obstetrics	195	...	...
(b) Gynecology (including some abdominal surgery)	105	...	...

Colleges may reduce the number of hours in any subject not more than 20 per cent. provided that the total number of hours in a division is not reduced. Where the teaching conditions in a college are best subserved, the subject may be, for teaching purposes, transferred from one division to another. When didactic and laboratory hours are specified in any subject, laboratory hours may be substituted for didactic hours.

(*Continued on opposite page*)

Number.	Michigan.....407	Minnesota.....313	Mississippi.....495	Missouri.....630	Montana.....87	Nebraska.....371	Nevada.....4	New Hampshire.....84	New Jersey.....435	New Mexico.....11	New York.....2162	North Carolina.....487	North Dakota.....96	Ohio.....859	Oklahoma.....171	Oregon.....111	Pennsylvania.....1799	Rhode Island.....105	South Carolina.....379	South Dakota.....87	Tennessee.....550	Texas.....704	Utah.....77	Vermont.....96	Virginia.....445	Washington.....88	West Virginia.....230	Wisconsin.....439	Wyoming.....11	Philippine Is.....59	Foreign.....579	Totals.....19,796	Number.
95	....	....	....	....	....	....	....	....	....	....	2	....	....	118	....	....	1	....	....	....	....	1	....	....	....	....	....	....	....	....	1	149	95
96	....	....	....	....	1	....	....	....	....	....	1	....	1	220	....	....	11	....	....	....	....	....	....	....	....	1	7	....	....	....	3	252	96
97	....	....	....	....	....	....	....	....	....	....	....	....	....	39	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	40	97
98	....	....	....	1	....	....	....	....	....	....	1	....	....	....	53	....	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....	63	98
99	2	2	....	....	2	....	....	....	....	....	3	....	....	2	....	23	1	1	....	2	2	....	....	....	....	4	....	4	....	....	8	72	99
100	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	41	....	....	....	....	....	....	....	....	....	5	....	....	....	....	....	47	100
101	....	....	....	....	....	....	....	....	14	....	5	....	....	2	....	....	94	....	....	....	....	....	....	....	2	1	....	1	....	....	5	135	101
102	1	2	2	....	3	4	....	2	40	....	8	27	1	17	....	4	314	3	4	....	4	4	3	2	8	7	5	2	1	5	7	559	102
103	....	....	....	....	....	....	....	1	27	1	8	....	....	1	....	....	363	....	....	....	....	1	5	1	....	....	....	....	....	8	28	462	103
104	....	....	....	....	....	....	....	....	8	....	....	....	....	....	....	....	69	....	....	....	....	....	....	....	....	....	....	....	....	....	5	82	104
105	2	1	....	2	....	....	....	....	32	....	15	16	....	12	....	2	265	3	3	....	3	4	2	1	6	3	1	2	....	4	14	445	105
106	1	1	....	1	1	....	....	....	8	....	12	1	....	3	....	....	40	1	1	....	1	....	....	1	....	2	1	....	....	3	11	110	106
107	....	....	....	1	....	....	....	....	1	....	....	....	....	8	....	....	226	....	....	....	....	....	....	....	....	....	3	....	....	....	1	240	107
108	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	185	....	....	....	....	....	1	....	....	....	....	....	....	203	108
109	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6	....	....	....	....	....	....	....	....	....	....	....	7	109
110	....	....	....	....	....	....	....	....	....	....	....	6	....	1	....	....	....	....	2	....	73	....	....	....	7	....	....	....	....	....	2	101	110
111	....	....	31	11	....	....	....	....	1	....	....	8	....	1	7	....	....	....	17	....	54	53	....	....	1	....	2	....	....	....	17	299	111
112	....	....	9	2	....	....	....	....	2	....	4	7	....	....	5	....	....	....	2	....	87	11	....	....	1	....	....	....	....	....	3	192	112
113	1	....	19	12	....	....	....	....	....	....	....	3	....	1	5	....	....	....	3	....	118	21	....	....	....	1	1	....	....	....	....	279	113
114	....	....	35	1	....	....	....	....	....	....	....	1	....	....	2	....	....	....	....	....	51	6	....	....	....	....	....	....	....	1	1	116	114
115	....	....	118	4	....	....	....	....	....	....	....	....	....	....	14	....	....	....	3	....	69	37	....	....	....	....	1	....	....	....	....	379	115
116	....	....	5	....	....	....	....	....	....	....	....	3	....	....	2	....	1	....	1	....	10	4	....	....	....	....	....	....	....	1	....	35	116
117	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6	....	....	....	....	....	....	82	....	....	....	....	....	....	....	....	....	90	117
118	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	172	....	....	....	....	....	....	....	....	2	177	118
119	....	....	1	....	....	....	....	....	....	....	....	1	....	....	2	1	1	....	....	....	1	79	....	....	....	....	....	....	....	....	....	90	119
120	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	65	....	....	....	....	....	....	....	....	....	69	120
121	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	17	....	....	....	....	....	....	....	....	19	121
122	1	....	....	....	....	....	....	15	3	....	23	....	....	1	....	....	3	3	....	....	....	....	....	68	....	....	....	....	....	....	5	186	122
123	....	1	....	....	....	....	....	....	3	....	6	27	....	....	....	....	3	....	4	....	1	1	....	....	151	1	6	1	....	....	1	210	123
124	....	....	....	....	....	....	....	....	1	....	1	48	....	....	....	....	....	....	1	....	....	....	....	....	83	....	7	....	....	....	2	149	124
125	....	....	4	....	....	....	....	....	....	....	....	9	....	....	....	....	1	....	5	....	1	1	....	....	39	....	1	....	....	....	2	79	125
126	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	12	....	....	1	....	13	126
127	7	32	....	....	1	....	....	....	....	....	....	....	8	1	....	....	....	....	....	....	....	....	....	....	....	....	....	199	....	1	1	253	127
128	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	46	....	....	1	55	128
129	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	1	....	....	....	....	....	....	....	33	....	....	....	48	129
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	

(Continued from opposite page)

The following section was added to Article V, May 6, 1907:

SEC. 2.—Each medical college in membership in the Association shall print in every annual catalogue or announcement a table of the total number of hours work given in said college, arranged both by subjects and years.

The following section was added to Article V, Feb. 28, 1911:

SEC. 3.—Each college in membership in this Association shall print annually a list of its students by classes.

The following colleges are members of the Association: Leland Stanford Junior University Department of Medicine, Palo Alto and San Francisco, Cal.; University of California, Medical Department, Berkeley, Los Angeles and San Francisco, Cal.; University of Southern California, Medical Department, Los Angeles, Cal.; University of Colorado, School of Medicine, Boulder and Denver, Colo.; George Washington University Department of Medicine, Washington, D. C.; Georgetown University School of Medicine, Washington, D. C.; Howard University Medical Department, Washington, D. C.; University of Illinois, College of Medicine, Chicago, Ill.; Northwestern University Medical School, Chicago, Ill.; Indiana University School of Medicine, Bloomington and Indianapolis, Ind.; Drake University College of Medicine, Des Moines, Iowa; State University of Iowa, College of Medicine, Iowa City, Iowa; Kansas Medical College, Medical Department of Washburn College, Topeka, Kan.; University of Kansas, School of Medicine, Lawrence and Rosedale, Kan.; University of Louisville, Medical Department, Louisville, Ky.; Medical Department of the Tulane University of Louisiana, New Orleans, La.; Baltimore Medical College, Baltimore, Md.; College of Physicians and Surgeons, Baltimore, Md.; Johns Hopkins University, Medical Department, Baltimore, Md.; University of Maryland, School of Medicine, Baltimore, Md.; Medical School of Howard University, Boston, Mass.; Tufts College Medical School, Boston, Mass.; Detroit College of Medicine, Detroit, Mich.; University of Michigan, Department of Medicine and Surgery, Ann Arbor, Mich.; University of Minnesota, College of Medicine and Surgery, Minneapolis, Minn.; University of Mississippi Medical Department, Oxford, Miss.; University of Missouri Department of Medicine, Columbia, Mo.; University Medical College, Kansas City, Mo.; St. Louis University School of Medicine, St. Louis, Mo.; Washington University Medical School, St. Louis, Mo.; University of Nebraska, College of Medicine, Lincoln and Omaha, Neb.; John A. Creighton Medical College, Omaha, Neb.; University of Buffalo, Medical Department, Buffalo, N. Y.; University and Bellevue Hospital Medical College, New York, N. Y.; Cornell University Medical College, Ithaca and New York, N. Y.; Syracuse University, College of Medicine, Syracuse, N. Y.; University of North Carolina, Medical Department, Chapel Hill, N. C.; Wake Forest College, School of Medicine, Wake Forest, N. C.; University of North Dakota, College of Medicine, University, N. D.; Western Reserve University, Medical Department, Cleveland, Ohio; Starling-Ohio Medical College, Columbus, Ohio; Ohio-Miami Medical College of the University of Cincinnati, Cincinnati, Ohio; State University of Oklahoma, School of Medicine, Norman, Okla.; Meharry Medical College, Medical Department of Walden University, Nashville, Tenn.; Vanderbilt University, Medical Department, Nashville, Tenn.; Medical College of Virginia, Richmond, Va.; University College of Medicine, Richmond, Va.; University of Wisconsin, College of Medicine, Madison, Wis.

The secretary-treasurer of the Association is Dr. Fred C. Zapffe, 3431 Lexington Street, Chicago.

COLLEGE NOTES

Colleges Closed During the Year.—Thirteen medical colleges have been closed during the year, eight of which were suspended and five by merger with other institutions. The list is as follows:

College of Physicians and Surgeons, Little Rock, Arkansas. Merged into the Medical Department of the University of Arkansas.

Denver and Gross College of Medicine, Denver, Colo. Merged into the University of Colorado School of Medicine.

American Medical Missionary College, Battle Creek, Mich., and Chicago. Merged into the College of Physicians and Surgeons, Chicago.

College of Medicine and Surgery, Physiomedical, Chicago. Absorbed by the Chicago College of Medicine and Surgery.

Reliance Medical College, Chicago. Discontinued.

Southwestern Homeopathic Medical College, Louisville, Ky. Merged into the Hahnemann Medical College and Hospital, Chicago.

Atlantic Medical College, Baltimore, Md., formerly the Southern Homeopathic Medical College. Suspended.

University Medical College, Kansas City, Mo. Suspended.

Knoxville Medical College (Colored), Knoxville, Tenn. Suspended.

College of Physicians and Surgeons, Memphis, Tenn. Merged with, and building to be occupied hereafter by, the Medical Department of the University of Tennessee, which is to be removed from Nashville.

University of Nashville, Medical Department, Nashville, Tenn. Dissolved its union with the University of Tennessee Medical Department and became extinct.

West Virginia University College of Medicine, Morgantown, W. Va. Closed.

The San Jose College of Medicine and Pharmacy of the San Thomas University, Manila, Philippine Islands, has been permanently closed.

(Continued on page 650)

A. STUDENTS FROM THE EASTERN STATES

Eastern States.	Year.	Attending Medical Schools in the East. Students.	East. Percentage.	Middle States. Students.	Middle States. Percentage.	West. Students.	West. Percentage.	South. Students.	South. Percentage.	Totals.
Connecticut	1908	264	96.7	6	2.2	0	0.	3	1.1	273
	1909	255	97.0	5	1.9	1	0.4	2	0.7	263
	1910	258	95.2	8	2.9	1	0.4	4	1.5	271
	1911	230	94.6	7	2.9	2	0.8	4	1.7	243
Delaware	1908	52	98.1	1	1.9	0	0.	0	0.	53
	1909	53	98.1	0	0.	1	1.9	0	0.	54
	1910	38	97.4	0	0.	0	0.	1	2.6	39
	1911	34	100.0	0	0.	0	0.	0	0.	34
Dist. of Columbia	1908	117	96.0	2	1.6	1	0.8	2	1.6	122
	1909	109	92.4	4	3.4	0	0.	5	4.2	118
	1910	109	94.0	5	4.3	0	0.	2	1.7	116
	1911	119	90.8	7	5.4	4	3.0	1	0.8	131
Maine	1908	172	94.5	6	3.3	2	1.1	2	1.1	182
	1909	165	94.8	5	2.9	3	1.7	1	0.6	174
	1910	149	97.4	4	2.6	0	0.	0	0.	153
	1911	144	90.3	4	2.7	2	1.3	1	0.7	151
Maryland	1908	236	95.5	6	2.4	1	0.5	4	1.6	247
	1909	302	97.1	4	1.3	0	0.	5	1.6	311
	1910	298	97.4	4	1.3	0	0.	4	1.3	306
	1911	288	99.0	3	1.0	0	0.	0	0.	291
Massachusetts	1908	835	97.4	15	1.7	4	0.5	3	0.4	857
	1909	789	97.0	12	1.5	7	0.9	5	0.6	813
	1910	778	96.2	20	2.5	4	0.4	7	0.9	809
	1911	782	95.5	22	2.7	8	1.0	7	0.8	819
New Hampshire	1908	113	95.0	4	3.4	1	0.8	1	0.8	119
	1909	102	99.0	1	1.0	0	0.	0	0.	103
	1910	95	97.9	0	0.	2	2.1	0	0.	97
	1911	81	96.4	1	1.2	2	2.4	0	0.	84
New Jersey	1908	426	94.2	18	4.0	2	0.5	6	1.3	452
	1909	438	97.1	10	2.2	1	0.3	2	0.4	451
	1910	445	94.9	16	3.4	1	0.2	7	1.5	469
	1911	433	95.1	13	2.9	1	0.2	8	1.8	455
New York	1908	1978	93.5	105	5.0	8	0.4	25	1.1	2116
	1909	1959	92.3	133	6.3	12	0.5	19	0.9	2123
	1910	1972	93.0	126	5.9	10	0.5	12	0.6	2120
	1911	2012	93.0	126	5.9	11	0.5	13	0.6	2162
Pennsylvania	1908	1920	91.3	155	7.4	4	0.2	25	1.1	2104
	1909	2005	92.9	130	6.0	11	0.5	13	0.6	2159
	1910	1828	91.9	145	7.3	7	0.3	10	0.5	1990
	1911	1639	91.1	145	8.1	5	0.2	10	0.6	1799
Rhode Island	1908	92	92.9	5	5.1	0	0.	2	2.0	99
	1909	94	94.9	3	3.1	2	2.0	0	0.	99
	1910	95	94.0	5	5.0	0	0.	1	1.0	101
	1911	99	95.1	4	3.9	1	1.0	0	0.	105
Vermont	1908	93	87.8	10	9.4	3	2.8	0	0.	106
	1909	95	89.6	7	6.6	4	3.8	0	0.	106
	1910	93	91.1	7	6.9	2	2.0	0	0.	102
	1911	93	96.9	2	2.1	1	1.0	0	0.	96
Virginia	1908	448	86.0	14	2.7	0	0.	59	11.3	521
	1909	410	85.1	17	3.5	3	0.6	52	10.8	482
	1910	400	86.0	21	4.5	3	0.7	41	8.8	465
	1911	396	89.0	15	3.4	2	0.4	32	7.2	445
West Virginia	1908	190	65.1	89	30.5	0	0.	13	4.4	292
	1909	168	62.0	89	32.8	0	0.	14	5.2	271
	1910	149	56.0	105	39.5	2	0.7	10	3.8	266
	1911	146	66.4	66	30.0	4	1.8	4	1.8	220
Totals	1908	6936	92.0	436	5.8	26	0.3	145	1.9	7543
	1909	6944	92.3	420	5.6	45	0.5	118	1.6	7527
	1910	6707	91.8	466	6.4	32	0.5	99	1.3	7304
	1911	6497	92.3	415	6.0	43	0.5	80	1.2	7035

B. STUDENTS FROM THE MIDDLE STATES

Middle States.	Year.	Attending Medical Schools in the East. Students.	East. Percentage.	Middle States. Students.	Middle States. Percentage.	West. Students.	West. Percentage.	South. Students.	South. Percentage.	Totals.
Illinois	1908	55	3.1	1651	94.4	14	0.8	29	1.7	1749
	1909	54	2.8	1832	95.4	14	0.8	20	1.0	1920
	1910	44	2.3	1884	96.2	14	0.6	17	0.9	1959
	1911	38	2.4	1535	96.1	17	1.1	8	0.4	1598
Indiana	1908	23	3.2	680	94.6	9	1.2	7	1.0	719
	1909	29	4.8	565	92.6	9	1.5	7	1.1	610
	1910	28	4.9	530	92.8	5	0.9	8	1.4	571
	1911	28	5.6	455	90.5	15	3.0	5	0.9	503
Iowa	1908	26	3.6	676	94.4	8	1.1	6	0.9	716
	1909	35	4.8	658	91.1	27	3.7	2	0.4	722
	1910	30	4.7	582	91.5	22	3.5	2	0.3	636
	1911	28	5.5	429	87.9	31	6.4	1	0.2	489
Kansas	1908	26	5.6	418	89.9	3	0.6	18	3.9	465
	1909	20	5.2	349	90.2	9	2.3	9	2.3	387
	1910	26	6.3	362	87.9	12	2.9	12	2.9	412
	1911	16	4.7	300	88.0	13	3.8	12	3.5	341
Kentucky	1908	33	5.2	541	85.2	0	0.	61	9.6	635
	1909	28	5.6	401	80.7	6	1.2	62	12.5	497
	1910	29	6.8	321	77.3	2	0.5	66	15.4	428
	1911	36	10.0	259	72.1	2	1.7	62	17.2	359
Michigan	1908	24	4.9	457	92.7	4	0.8	8	1.6	493
	1909	11	2.2	470	95.7	6	1.4	4	0.7	491
	1910	11	2.5	429	95.6	6	1.3	3	0.6	449
	1911	9	2.2	388	95.3	7	1.7	3	0.8	407
Minnesota	1908	21	5.7	350	94.3	0	0.	0	0.	371
	1909	25	7.2	313	90.2	7	2.0	2	0.6	347
	1910	16	4.7	313	92.6	6	1.8	3	0.9	338
	1911	12	3.6	291	93.1	9	2.9	1	0.4	313
Missouri	1908	26	2.8	851	92.6	9	1.0	33	3.6	919
	1909	27	3.4	743	91.4	12	1.3	31	3.9	813
	1910	28	3.5	734	91.0	12	1.4	33	4.1	807
	1911	21	3.3	550	88.7	12	2.0	37	6.0	620
Nebraska	1908	12	3.6	317	95.5	2	0.6	1	0.3	332
	1909	8	2.3	329	95.1	9	2.6	0	0.	346
	1910	8	2.7	285	94.6	8	2.7	0	0.	301
	1911	10	3.7	250	92.2	11	4.1	0	0.	271
North Dakota	1908	6	7.9	70	92.1	0	0.	0	0.	76
	1909	8	10.4	68	88.3	1	1.3	0	0.	77
	1910	7	7.2	89	91.8	1	1.0	0	0.	97
	1911	8	8.3	88	91.7	0	0.	0	0.	96
Ohio	1908	140	15.3	756	82.9	5	0.6	11	1.2	912
	1909	116	12.5	792	85.3	13	1.4	8	0.8	929
	1910	99	11.0	780	86.5	14	1.6	9	0.9	902
	1911	101	11.6	740	86.2	9	1.6	9	1.6	859
South Dakota	1908	3	4.2	66	93.0	0	0.	2	2.8	71
	1909	1	1.1	86	98.9	0	0.	0	0.	87
	1910	4	4.7	80	94.1	1	1.2	0	0.	85
	1911	6	6.9	78	89.7	3	3.4	0	0.	87
Wisconsin	1908	22	4.6	450	94.2	2	0.4	4	0.8	478
	1909	18	4.2	407	94.7	5	1.1	0	0.	430
	1910	16	3.1	498	96.0	5	0.9	0	0.	519
	1911	21	4.5	427	93.0	11	2.5	0	0.	459
Totals	1908	417	5.3	7283	91.8	56	0.6	180	2.3	7936
	1909	380	5.0	7013	91.6	118	1.5	145	1.9	7656
	1910	617	8.2	6826	88.3	108	1.5	153	2.0	7504
	1911	334	5.2	5790	90.5	140	2.2	138	2.1	6402

This table gives an interesting study of the migration of medical students. It shows that of the 19,148 medical students coming from the various states and attending the medical schools of the United States during the session of 1910-11, 2,330 went to other parts of the country to study medicine. Groups A, B, C and D show where the students from each section go to study medicine. Group A shows where the students coming from the eastern section of the country went to study medicine. Section B shows the same for the students from the middle section of the country. Table C, students from the western section of the country, and Table D, students from the southern section. For example, Group A shows that 7,035 medical students came from the eastern section during 1910-11 and of that number 6,497 entered colleges of the east, 415 attended colleges of the middle states, 43 attended western colleges and 80 attended southern colleges. Figures for the last four college sessions are given and this permits an interesting study by states. For example, Kentucky furnished 635 students in 1908 but only 359 in 1911; nevertheless, where only 9.6 per cent. attended southern colleges in 1907-08, 17.2 per cent. attended southern colleges in 1910-11. Was this due to the fact that the south has better medical colleges now than in 1908 or to the fact that a large number of colleges in the middle section have adopted higher standards? These tables show also the total number of students coming from each state for each of the last four years as well as from each section. For example, a study of Group A shows that for each of the four years New York furnished over 2,100 medical students and about 93 per cent. of those students attended the colleges of their home section. Group D of Table 3 shows that the southern section furnished 5,467 students for the session of 1907-08 but only 4,848 for the session of 1910-11. This section also shows a larger percentage of students going to the eastern schools in 1911 than went to those schools in 1908; it also shows that a smaller portion of students attended the colleges of the middle states during 1911 than attended those schools in 1908.

(Continued from page 649)

Endowments, New Medical Buildings and Hospitals

Alabama.—The state legislature made an appropriation of $25,000 per year for the running expense of the Medical Department of the University of Alabama, Mobile.

Connecticut.—Yale Medical School received a donation of $30,000 from Francis E. Loomis of the class of 1864. Of this

(Continued on opposite page)

C. STUDENTS FROM THE WESTERN STATES

Western States.	Year.	Attending Medical Schools in the East. Students.	East. Percentage.	Middle States. Students.	Middle States. Percentage.	West. Students.	West. Percentage.	South. Students.	South. Percentage.	Totals.
Arizona	1908	1	6.7	4	26.7	2	13.3	8	53.3	15
	1909	1	8.3	3	25.0	2	16.7	6	50.0	12
	1910	2	40.0	1	20.0	0	0.	2	40.0	5
	1911	3	30.0	3	30.0	2	20.0	2	20.0	10
California	1908	55	13.5	39	9.6	306	75.0	8	1.9	408
	1909	52	18.4	33	11.7	192	68.1	5	1.8	282
	1910	48	13.4	26	7.2	277	77.2	8	2.2	359
	1911	53	15.1	30	7.8	266	74.1	10	3.0	359
Colorado	1908	9	5.8	28	17.9	117	75.0	2	1.3	156
	1909	10	6.7	21	14.0	116	77.3	3	2.0	150
	1910	13	8.3	29	18.5	112	71.3	3	1.9	157
	1911	14	9.8	31	21.7	93	65.0	5	3.5	143
Idaho	1908	2	8.3	17	70.9	5	20.8	0	0.	24
	1909	1	3.8	16	61.6	8	30.8	1	3.8	26
	1910	1	4.8	11	52.2	9	42.8	0	0.	21
	1911	5	20.0	14	56.0	6	24.0	0	0.	25
Montana	1908	8	18.6	32	74.4	1	2.3	2	4.7	43
	1909	6	19.4	21	67.7	4	12.9	0	0.	31
	1910	8	21.6	25	67.6	4	10.8	0	0.	37
	1911	8	29.6	18	66.7	1	3.7	0	0.	27
Nevada	1908	1	12.5	3	37.5	3	37.5	1	12.5	8
	1909	1	12.5	3	37.5	4	50.0	0	0.	8
	1910	0	0.	5	83.3	1	16.7	0	0.	6
	1911	0	0.	1	25.0	3	75.0	0	0.	4
New Mexico	1908	2	18.2	3	27.3	2	18.2	4	36.3	11
	1909	3	37.5	4	50.0	1	12.5	0	0.	8
	1910	3	27.3	5	45.5	1	9.1	2	18.1	11
	1911	2	18.2	9	81.8	0	0.	0	0.	11
Oregon	1908	22	16.8	15	11.5	92	70.2	2	1.5	131
	1909	19	16.4	19	16.4	77	66.3	1	0.9	116
	1910	15	11.5	25	19.2	90	69.2	0	0.	130
	1911	19	17.1	21	18.9	70	63.1	1	0.9	111
Utah	1908	35	35.4	34	34.3	29	29.3	1	1.0	99
	1909	22	29.3	22	42.7	20	26.7	1	1.3	75
	1910	25	28.4	35	39.8	26	29.6	2	2.2	88
	1911	18	23.4	40	51.9	19	24.7	0	0.	77
Washington	1908	26	25.2	47	45.7	26	25.2	4	3.9	103
	1909	29	32.6	36	40.4	21	23.6	3	3.4	89
	1910	26	29.3	40	44.9	21	23.6	2	2.2	89
	1911	30	34.1	43	48.9	14	15.9	1	1.1	88
Wyoming	1908	1	16.7	4	66.7	1	16.7	0	0.	6
	1909	3	21.4	5	35.7	5	35.7	1	7.2	14
	1910	3	27.3	5	45.4	3	27.3	0	0.	11
	1911	4	36.3	6	54.5	1	9.2	0	0.	11
Totals	1908	162	16.1	226	22.5	584	58.2	32	3.2	1004
	1909	147	18.1	193	23.8	450	55.5	21	2.6	811
	1910	144	15.8	207	22.6	544	59.5	19	2.1	914
	1911	156	18.1	216	24.8	475	55.0	19	2.1	866

(*Continued from opposite page*)

sum $20,000 is for medical research and $10,000 is to go toward the endowment of the university clinic.

Georgia.—The Atlanta College of Physicians and Surgeons received a gift of $5,000 from Dr. W. S. Elkin, which was expended in equipping the departments of embryology, histology and physiology.

—The Medical College of Georgia received $46,000 from the citizens of Augusta, for a new college building.

Illinois.—The legislature appropriated $120,000 for the College of Medicine of the University of Illinois (The College of Physicians and Surgeons, Chicago). This is $60,000 per year for two years.

—The sum of $65,000 has been donated by Mrs. Anna W. Phelps to provide a new site for the Hahnemann Hospital, Chicago. In his will the late Erskine M. Phelps had bequeathed $30,000 for a new hospital building and $75,000 for a nurses home. It is stated that the Hahnemann Medical College intends to sell its present college building and will erect another building on the new site.

—A gift of $250,000 was received by Northwestern University Medical School, Chicago, from Mr. James A. Patten, to endow and maintain a chair of medical research.

D. STUDENTS FROM THE SOUTHERN STATES

Southern States.	Year.	Attending Medical Schools in the East. Students.	East. Percentage.	Middle States. Students.	Middle States. Percentage.	West. Students.	West. Percentage.	South. Students.	South. Percentage.	Totals.
Alabama	1908	36	5.3	24	3.5	0	0.	623	91.2	683
	1909	116	12.5	792	85.3	13	1.4	8	0.8	929
	1910	33	5.2	27	4.3	1	0.2	572	90.3	633
	1911	32	5.8	17	2.9	1	0.2	499	91.1	549
Arkansas	1908	20	4.8	60	14.3	0	0.	339	80.9	419
	1909	20	5.2	47	12.2	0	0.	317	82.6	384
	1910	18	4.5	56	14.3	1	0.5	317	80.7	392
	1911	17	5.5	42	13.7	1	0.5	247	80.5	307
Florida	1908	19	14.4	9	6.8	0	0.	104	78.8	132
	1909	27	17.2	9	5.7	0	0.	121	77.1	157
	1910	22	15.4	12	8.4	1	0.7	108	75.5	143
	1911	31	18.8	8	4.8	1	0.6	127	75.8	167
Georgia	1908	51	7.8	17	2.6	1	0.1	586	89.5	655
	1909	50	7.6	15	2.2	1	0.2	593	90.0	659
	1910	45	6.4	13	1.9	0	0.	644	91.7	702
	1911	51	7.3	20	2.8	0	0.	639	89.9	710
Louisiana	1908	19	3.9	30	6.2	0	0.	438	89.9	487
	1909	20	4.4	31	6.8	1	0.2	404	88.6	456
	1910	14	3.7	23	6.1	3	0.8	336	89.4	376
	1911	17	5.9	13	3.9	1	0.3	298	90.6	329
Mississippi	1908	16	2.7	39	6.5	1	0.4	547	90.4	603
	1909	18	3.0	40	6.7	1	0.2	534	90.1	593
	1910	17	3.0	37	6.6	0	0.	506	90.4	560
	1911	17	3.2	23	4.7	0	0.	455	92.1	495
North Carolina	1908	158	31.5	13	2.5	2	0.4	329	65.6	502
	1909	170	33.1	11	2.1	1	0.2	332	64.6	514
	1910	174	35.3	11	2.2	0	0.	308	62.5	493
	1911	201	41.0	9	1.9	0	0.	277	57.1	487
Oklahoma	1908	8	5.3	41	27.0	1	0.7	102	67.0	152
	1909	8	4.3	55	29.6	0	0.	123	66.1	186
	1910	6	3.1	63	36.5	0	0.	134	60.4	192
	1911	8	4.7	40	23.4	1	0.6	122	71.3	171
South Carolina	1908	73	21.3	9	2.6	0	0.	261	76.1	343
	1909	66	16.8	12	3.0	1	0.3	314	79.9	393
	1910	75	18.2	8	1.9	0	0.	330	79.9	413
	1911	72	18.8	6	1.6	1	0.2	300	79.4	379
Tennessee	1908	19	3.1	45	7.3	1	0.1	552	89.5	617
	1909	21	3.9	38	7.1	0	0.	478	89.0	537
	1910	26	4.5	43	7.6	0	0.	500	87.9	569
	1911	25	4.5	36	6.5	3	0.6	486	88.4	550
Texas	1908	41	4.7	113	12.9	3	0.4	717	82.0	874
	1909	39	5.2	76	10.1	7	0.9	629	83.8	751
	1910	45	6.3	70	9.7	6	0.8	598	83.2	719
	1911	36	5.0	53	7.5	8	1.2	607	86.3	704
Totals	1908	460	8.4	400	7.3	9	0.1	4598	84.2	5467
	1909	473	8.9	356	6.7	12	0.3	4474	84.1	5317
	1910	475	9.1	352	6.8	12	0.3	4353	83.8	5192
	1911	507	10.4	267	5.5	17	0.3	4057	83.8	4848
Average 1908, 1909 1910 and 1911...	A	6771	92.1	434	5.9	37	0.5	110	1.5	7352
	B	437	5.9	6078	90.6	105	1.4	154	2.1	7374
	C	152	16.9	210	23.4	513	57.1	23	2.6	898
	D	479	9.2	344	6.6	12	0.2	4370	84.0	5205
Where migrating students went.	1908	1039	40.8	1062	41.7	91	3.5	357	14.0	2549
	1909	1000	41.2	971	40.0	175	7.1	284	11.7	2430
	1910	1092	42.7	1020	39.9	139	5.5	304	11.9	2555
	1911	958	42.6	895	38.6	206	8.6	237	10.2	2330

Indiana.—Property valued at $200,000 was donated by Dr. and Mrs. R. W. Long of Indianapolis toward the establishing of a state hospital under the direction of the Indiana University School of Medicine. The school also received a bonus of $25,000 annually through the last legislature.

Iowa.—One new building at a cost of $30,000 has been completed by the Drake University College of Medicine, Des Moines, and a second building which will cost a like sum is now in course of construction.

—An addition has been made to the University Hospital of the State University of Iowa College of Medicine, at a cost of $100,000.

Maryland.—The University of Maryland School of Medicine has received pledges amounting to $7,250 toward an endowment for the department of pathology.

(*Continued on next page*)

Massachusetts.—Harvard Medical School was left $22,000 by the will of the late Samuel Hubbard Scudder, which will revert to the school on the death of the testator's sister, Mrs. Mary E. Blatchford. Also $4,000 in cash and all his medical books and scientific apparatus were received through the will of the late Dr. Henry P. Bowditch.

—The medical building of the Tufts College Medical School has been enlarged at an expense of about $50,000.

Missouri.—The Robert A. Barnes Hospital is to be erected on the campus of the Washington University School of Medicine on King's highway, St. Louis, at a cost of $1,500,000. It will consist of a group of ten buildings.

—A new hospital for the clinical department of the St. Louis University School of Medicine has been erected by the Sisters of Mercy at a cost of $350,000.

New York.—The Medical Department of the University of Buffalo has erected an addition to its college building at a cost of $20,000.

—An additional donation of $3,820,000 has been given by John D. Rockefeller for the Rockefeller Institute of Medical Research. This brings his total gifts for the institute to $8,240,000.

—Fordham University School of Medicine is erecting a new college building, the approximate cost of which, when completed, will be $100,000.

—A gift of $1,300,000 has been pledged for the perfection of the affiliation of the Presbyterian Hospital and the medical school of Columbia University. The gift was made through Edward H. Harkness and is believed to have come from members of his family. He himself contributes $300,000 for the erection of a surgical pavilion to be equipped with modern appliances and also a complete laboratory for advanced research work. More recently $100,000 has been given to this hospital by the will of Miss Adele A. Dortic and a second $100,000 by the Supreme Court decision in regard to the will of Edward O. Kindberg.

—Columbia University received an anonymous gift of $10,000 annually for four years, a total of $40,000, to be used in surgical research.

—A sum of $10,000 has been pledged by the alumni of the New York Homeopathic Medical College and Hospital for the maintenance of the bacteriological laboratory at the college.

Nebraska.—The Nebraska legislature appropriated $100,000, which will be used to establish all four years of the medical course of the University of Nebraska College of Medicine on the new campus in Omaha.

North Carolina.—A new medical building has been erected on the campus of the University of North Carolina at an approximate cost of $37,000.

Ohio.—Western Reserve University has received from Mr. H. M. Hanna a gift of $250,000 toward an endowment fund for the Medical Department.

—A new addition to the laboratory building of the Starling-Ohio Medical College has been erected at a cost of $10,000.

—Ohio-Miami Medical College of the University of Cincinnati received $50,000 by the will of the late Dr. Francis Brunning as an addition to the endowment fund.

Oregon.—The legislature recently made an appropriation of $30,000 for the Medical Department of the University of Oregon.

Pennsylvania.—The University of Pennsylvania received a gift of $100,000 to be used in establishing a "Benjamin Rush Chair of Physiologic Chemistry." The chair has been established and Dr. Alonzo E. Taylor has been chosen for the place.

—A modern clinical amphitheater was erected for the Woman's Medical College of Pennsylvania at a cost of $22,500. The college also received a bequest of $3,000 by the will of the late Annie Shoemaker.

—The Hahnemann Medical College and Hospital of Pennsylvania is said to have received a gift of $100,000 to establish a chair in materia medica.

South Carolina.—A new building is being erected by the Medical College of South Carolina which will cost approximately $75,000.

Tennessee.—A special donation of $150,000 was made by Mr. W. K. Vanderbilt to purchase the sixteen-acre campus of the Peabody Normal College for the Medical and Dental Departments of Vanderbilt University. Vanderbilt University has now assumed all responsibility financially and otherwise for its medical department.

—Meharry Medical College, Nashville, has been promised $10,000 by Mr. Andrew Carnegie for the completion of Hubbard Hospital, on condition that another $10,000 is raised from other sources.

Virginia.—The University College of Medicine, Richmond, is erecting a new college building to replace the one destroyed by fire in January, 1910. The approximate cost will be $135,000.

Wisconsin.—An anonymous donor contributed $5,000 to the maintenance fund of the Wisconsin College of Physicians and Surgeons, Milwaukee.

Philippine Islands.—The new Philippine General Hospital at Manila has been completed. It is located on the same campus as the Philippine Medical School, now the College of Medicine and Surgery of the University of the Philippines.

Total Donations for the Year.—Although there were doubtless other instances of gifts or new buildings not reported to us, the above items show that at least $855,500 were spent during the year for new medical buildings; $459,000 were received in straight donations; $215,000 were given for the endowment of special chairs; $266,130 for the endowment of the medical schools proper and $150,000 for a new campus. Therefore, for purposes directly concerned with medical education a total of $1,945,630 was provided for. Besides this sum, $3,755,000 were given to establish teaching hospitals and $310,000 for medical research in medical schools, increasing the total to $6,010,630. This does not include an additional sum of $3,820,000 given by Mr. Rockefeller for medical research at the Rockefeller Institute.

Other College Notes

Adopted Hospital Year.—The University of Minnesota College of Medicine and Surgery has adopted the requirement that beginning this fall all matriculants must have attended a five-year course before graduation and that the fifth or last year must have been spent as an intern in a hospital satisfactory to the college.

Adopt Concentration Method.—The concentration method of teaching medicine, modifications of the method employed at the Harvard Medical School, have been adopted by Syracuse University College of Medicine, Syracuse, N. Y.; Drake University College of Medicine, Des Moines, Iowa, and the State University of Iowa College of Medicine, Iowa City.

To Save Old Medical Building.—The alumni of the Department of Medicine and Surgery of the University of Michigan are endeavoring to raise $50,000 to save the old medical building as a memorial to the medical department. This amount will be sufficient to reconstruct the interior without changing the outside appearance.

Special Chair in Preventive Medicine.—A special chair in preventive medicine has been established at the Washington University Medical School and Dr. David L. Edsall, formerly professor of medicine in the University of Pennsylvania has been selected to occupy the place.

Diploma Mill Again Closed.—The Gate City Medical College, formerly located at Texarkana and which was reported to have been closed in 1907, reopened in Dallas in 1910. Circulars were sent out offering to give courses by mail and several of these were sent by the recipients to the office of the American Medical Association.[1] Some decoy correspondence was carried on with the dean, Dr. J. W. Decker. This correspondence and several of the circulars were forwarded to the Texas State Medical Association, who placed the matter in the hands of their attorney, Mr. James N. Wilkerson. Mr. Wilkerson succeeded in purchasing outright two diplomas from Decker for $50 on December 29, 1910. Decker was arrested and a bill of indictment was found against him by the Federal Grand Jury

1. The Journal A. M. A., March 18, 1911, p. 839.

for fraudulent use of the mails. In May, 1911, Decker was convicted and sentenced to fifteen months of hard labor at Fort Leavenworth, Kansas. At the trial it was shown that the defunct College of Physicians and Surgeons had been consolidated with this "college" and that the entire equipment of the consolidated institution consisted of a stove, a table, two chairs, a manikin, a blackboard and a defective skeleton.

Cooperative Course in Public Health.—The board of directors of the University of Cincinnati has arranged to cooperate with the health department of the city of Cincinnati to provide for the medical students a training in public health work. Each of the two upper classes will be divided into four groups and each group will be assigned to the board of health where the students will do chemical and bacteriological work (such as the examination of milk and water, the making of tests for typhoid fever, tuberculosis, diphtheria, etc.) They will also do sanitary inspection and fumigation; trace the sources of infections; make food, dairy, bakery, barber-shop and school inspections; practice preventive inoculation and vaccination; study the methods of disposal of sewage and of the dead and serve in the city dispensaries. Students will also participate in the work of the Antituberculosis League, and in the office work of the board of health, studying methods of making reports, compiling statistics and keeping records. Two groups of students, one from each class, will be assigned to the board of health at one time and these two groups will serve for one month after which two other groups will be assigned until all students have taken the work. This work is designed to send out physicians who will be better acquainted with public health problems and better trained to take up the work of disease prevention.

Public Health Course in Wisconsin.—In conjunction with the State Department of Public Health, the University of Wisconsin has arranged for a special course for public health officers to begin this fall. The course will extend over one year and will lead to a Diploma of Public Health. It will be open to those who have received a degree in medicine or in medical or sanitary science and desire to fit themselves especially for public health work. The subjects offered are as follows:

First Semester.—1. Bacteriology for Health Officers. 2. Physiology—Respiration, dietetics, the chemistry of food, air, water, sewage, etc. 3. Meteorology. 4. Medical Zoology.

Second Semester.—1. Special Bacteriology, Pathology and Hygiene for Health Officers. To include bacteriology of air, water, food and soils, epidemiology, diseases of animals transferable to man, occupational diseases, etc. 2. Microscopical Examination of Drugs and Foods. 3. Public Health Administration and Vital Statistics. 4. Practical Field Work. 5. Hydrology.

In addition to the course above outlined, it is planned to have a conference of public health officers of the villages and cities of Wisconsin at the state university once in two years. The recent legislature passed a bill authorizing the secretary of the State Board of Health to call a conference of this kind and authorizing the expenses of such officers who attend such a conference to be paid by the village or city from which they come.

FOREIGN COLLEGE NOTES

Adelaide, Australia.—The medical school in the University of Adelaide, Australia, was founded in 1883, but the complete curriculum was not offered until 1886. The course covers five years of nine months each in addition to preliminary work, including courses in physics, chemistry and elementary biology. The faculty numbers 17. The total enrolment of medical students in 1910 was 73; graduates, 8. The amount received from medical students' fees in 1910 was 2,172 pounds (about $10,860), while the amount expended for medical teaching was 3,072 pounds (or about $15,360). The school has endowments amounting to 36,000 pounds (about $180,000).

Canton, China.—The University Medical School of Canton, China, was organized in 1908 by the Christian Association of the University of Pennsylvania as a modern missionary enterprise. A dispensary was opened. In the first year, 3,839 patients were treated, and in the second year 4,203. A hospital to cost $16,500 is now being erected. The first class consisting of four students was enrolled in February, 1910. That the standards of its work may be guaranteed it is desired to bring the Medical School and Hospital into some direct official relationship with the University of Pennsylvania. It is now affiliated with the Canton Christian College, an institution incorporated under the regents of the State of New York, with assets of $180,000; having a faculty of twelve American professors, assisted by fourteen Chinese instructors. The campus of the Canton Christian College consists of forty-eight acres, adjoining the eight-acre tract belonging to the University Medical School.

—Reports have also been received from the South China Medical College at Canton, which during 1910 enrolled thirty-six students. Eleven physicians are engaged in teaching. A four-year course of over 900 hours each year is required. Before completing his course the student is required to do six months' clinical work in the hospital wards. In the hospital 1,928 patients were cared for during 1910, and in the out-patient department, 17,962. There were 1,747 surgical operations.

Siena, Italy.—The Royal University of Siena, Italy, gives a medical course covering six years, including preliminary courses in physics, chemistry and biology. The medical faculty numbers twenty. The annual session begins early in November and extends to the last week in July of each year. During 1909-10 the enrolment of medical students was forty-nine, including nine candidates for graduation.

Halifax, Nova Scotia.—Dalhousie University has taken over the Halifax Medical College and hereafter assumes full control, financially and otherwise. The college is to be completely reorganized and the name has been changed to the Dalhousie Medical College, Medical Faculty of Dalhousie University.

Zurich, Switzerland.—The total enrolment of medical students at the University of Zurich during last year was 393, and of this number 124 were women. The faculty is made up of eighteen professors and twenty-seven docents, a total of forty-five. The summer semester begins in April and the winter semester in October of each year. The course covers five years, including preliminary courses in physics, chemistry and biology.

Beirut, Syria.—In France, 100,000 francs, or more than $20,000, have been subscribed for the enlargement of the Beirut Medical School at Beirut, Syria. The number of students enrolled is reported at 250, and the new building will increase the capacity to 400. A new teaching hospital is also planned.

—The School of Medicine of the Syrian Protestant College of Beirut, Syria, was organized in 1867, the first class graduating in 1871. The course covers four years of thirty-five weeks each. Its faculty numbers fourteen. The total enrollment for 1909-10 was 138; graduates, eighteen. Johanniter Hospital is under the care of the medical school. It has eighty-three beds and over 800 patients were admitted during the year. In the policlinic, the out-patient department, over 13,000 cases were treated during the year. The school possesses a medical library of over 1,800 volumes and several prominent medical journals, American, English and French.

Montpellier, France.—The medical course at the University of Montpellier extends over four years. For admission a diploma from a seven-year gymnasium or lyceum is required and in addition to this the student must complete a year in the college of science devoted to physics, chemistry and biology. During the session of 1909-10, 729 medical students were enrolled and 133 were granted degrees. Of this number 120 received state diplomas and thirteen the diploma of the university. Of the 729 students, 650 were in regular attendance, the other seventy-nine being absent on military duty or for other cause.

Montreal, Canada.—The Medical Faculty of McGill University is now occupying the new buildings erected during 1909 and 1910 at a cost of 450,000, to replace those destroyed by fire in April, 1907. The money was provided by Lord Strathcona, who in June, 1911, gave an additional $100,000 for equipment.

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[For other information see second page following reading matter]

SATURDAY, AUGUST 19, 1911

MEDICAL EDUCATION IN THE UNITED STATES

The tabulated statistics herewith presented (pages 642 to 651) are for the year ending June 30, 1911, and are based on signed reports received directly from the medical colleges, or from other reliable sources. We wish here to acknowledge the courtesy and cooperation of the officials of the medical colleges which have made the compilation of these complete statistics possible.

STATISTICS OF COLLEGES

On pages 642 to 644 is Table 1, which gives all the colleges in session during 1910-11, the population of the city in which each college is located, the number of students, men and women, registered during the year, the number of 1911 graduates, men and women, the number of graduates holding collegiate degrees, the number of teachers for each college, the number of weeks of actual work in the college year, the total fees for each year, the executive officer of the college and the dates of beginning and ending of the next session. The figures in heavy-faced type show the totals by states. Beginning on page 630 are given essential facts concerning all medical colleges, arranged by states.

NUMBER OF MEDICAL STUDENTS

The total number of medical students (matriculants) in the United States for the year ending June 30, 1911, excluding special students, was 19,786, a decrease of 1,740 below 1910, a decrease of 2,359 below 1909, a decrease of 2,816 below 1908, and a decrease of 8,356 below 1904, when the highest number of students was enrolled. In fact, it is the lowest number since THE JOURNAL began compiling these statistics in 1900. Of the total number of students, 18,414 were in attendance at the regular colleges, 890 at the homeopathic, 433 at the eclectic, and 49 at the physiomedical colleges. The attendance at the regular colleges shows a decrease of 1,722 below that of last year, of 2,140 below 1909, and 2,522 below 1908. In the homeopathic colleges there was an increase of 23 above the attendance of 1910, but a decrease of 9 below the total for 1909. The eclectic colleges show a decrease of 22 below 1910, but an increase of 20 above 1909. The physiomedical colleges had the same number as last year, 49 students, as compared with 52 in 1909, and 90 in 1908.

TABLE 4.—MEDICAL COLLEGE ATTENDANCE

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Nondescript.	Total.
1880.....	9,776	1,220	830	...	...	11,826
1890.....	13,521	1,164	719	...	...	15,404
1900.....	22,710	1,909	522	...	...	25,171
1901.....	23,846	1,683	664	80	144	26,417
1902.....	24,878	1,617	765	91	150	27,501
1903.....	24,930	1,498	848	149	190	27,615
1904.....	23,662	1,300	1,014	123	234	28,142
1905.....	24,119	1,104	578	114	232	26,147
1906.....	23,116	1,085	644	110	249	25,204
1907.....	22,303	1,030	545	97	202	24,276
1908.....	20,936	891	479	90	206	22,602
1909.....	20,554	890	413	52	227	22,145
1910.....	20,136	867	455	49	19	21,526
1911.....	18,414	890	433	49	...	19,786

GRADUATES

The total number of graduates for the year ending June 30, 1911, was 4,273, a decrease of 167 below 1910, of 242 below 1909, of 468 below 1908 and of 707 below 1907. It is the lowest number graduating since THE JOURNAL began compiling these statistics, and is 181 less than the number graduated in 1890. The total this year is 1,474 less than in 1904, when there were 5,747 graduates. The percentage of graduates to matriculants was 21.6 this year, as compared with 20.7 in 1910, 20.1 in 1909 and 21.0 in 1908. The number of graduates from the regular colleges was 4,006, or 107 less than in 1910, 157 less than in 1909, and 364 less than in 1908. From the homeopathic colleges there were 152 graduates, or 31 less than in 1910, 57 less than in 1909, and 63 less than in 1908. The eclectic colleges graduated 110, 4 less than last year, but 26 more than in 1909. The physiomedical colleges had 5 graduates this year, as compared with 16 last year and 15 in 1909.

TABLE 5.—MEDICAL COLLEGE GRADUATES

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Nondescript.	Total.
1880.....	2,673	380	188	..	..	3,241
1890.....	3,853	380	221	..	..	4,454
1900.....	4,715	413	86	..	..	5,214
1901.....	4,879	387	148	18	12	5,444
1902*.....	4,508	336	158	16	11	5,009
1903.....	5,088	420	140	24	17	5,688
1904.....	5,190	371	146	20	20	5,747
1905.....	5,126	276	153	22	23	5,600
1906.....	4,841	286	186	22	29	5,364
1907.....	4,591	225	121	11	32	4,980
1908.....	4,370	215	116	12	28	4,741
1909*.....	4,163	209	84	15	44	4,515
1910*.....	4,113	183	114	16	14	4,440
1911.....	4,006	152	110	5	..	4,273

* The figures for these years include some corrections made since the last Educational Number was published.

Of the 4,273 medical graduates, 705, or 16.5 per cent., were reported to hold also degrees in arts or science, as compared with 15.3 per cent. last year and 15.6 per cent. in 1909. As will be noted by referring to Table 10, of the 705 graduates holding baccalaureate degrees, 102, the largest number, came from Illinois colleges, followed by 94 from Maryland, 91 from Massachusetts, 81 from Pennsylvania and 76 from New York colleges. It is expected that in future the percentage of college graduates entering medicine will increase since more medical schools are requiring college work for admission.

WOMEN IN MEDICINE

During the past year there were 680 women studying medicine, a decrease of 227 below 1910, and a decrease of 241 below 1909. The percentage of all medical students was 3.4 as compared with 4.2 last year. There were 159 women graduates this year, or 3.7 per cent. of all graduates. In 1910 there were 907 women students and 157 graduates, while in 1909 there were 921 women students and 162 graduates. Of all the women matriculants, 134 (17.7 per cent.) were in attendance at the two medical colleges for women, as compared with 155 (17.1 per cent.) in 1910, 169 (18.4 per cent.) in 1909 and 186 (22.3 per cent.) in 1908. The remaining 546 (80.3 per cent.) were matriculated in coeducational colleges. From the two women's colleges, there were 36, or 22.6 per cent., of all women graduates, as compared with 41 (26.1 per cent.) in 1910 and 33 (20.3 per cent.) in 1909. There were 123, or 80.3 per cent., of all women graduates who secured their degrees from coeducational colleges.

TABLE 6.—WOMEN IN MEDICINE

Year.	Total women students.	Percentage of all graduates, both sexes.	Total women graduates.	Percentage of Grads., both sexes.	Women's colleges.	Students.	Percentage of all women students.	Graduates.	Percentage of all woman graduates.	Co-ed. schools.	Students.	Percentage of all women graduates.	Graduates.	rcentage of all woman graduates.
1904	1,129	4.3	244	4.0	3	182	16.2	56	23.0	97	946	83.8	198	77.0
1905	1,073	4.1	219	4.0	3	221	20.6	54	24.5	96	852	79.4	165	75.5
1906	895	3.5	233	4.3	3	189	21.0	33	14.1	90	706	79.0	200	85.9
1907	928	3.8	211	4.2	3	210	22.6	39	18.5	86	718	77.4	172	81.5
1908	835	3.7	185	3.9	3	186	22.3	46	24.9	88	649	77.7	139	75.1
1909	921	4.2	162	3.7	3	169	18.4	33	20.3	91	752	81.6	129	79.7
1910	907	4.2	157	3.5	3	155	17.1	41	26.1	82	752	82.9	116	73.9
1911	680	3.4	159	3.7	2	134	19.7	36	22.6	74	546	80.3	123	77.4

NUMBER OF COLLEGES

Since June 30, 1910, 13 colleges (mentioned on page 649) have either suspended or have merged into others, leaving 120 medical colleges still existing. The regular colleges number 101, a decrease of 10 since last year. The homeopathic colleges number 12, a decrease of 1 since last year. Of the eclectic colleges the number is 7, the same as last year. Among the 13 colleges which closed during the year, were included the last of the physiomedical colleges, and the last of the unclassifiable colleges.

TABLE 7.—MEDICAL COLLEGES

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Nondescript.	Total.
1880	72	12	6	..	..	90
1890	93	14	6	..	..	116
1900	121	22	8	..	..	151
1901	124	21	10	2	2	159
1902	121	20	10	3	1	155
1903	121	19	10	3	1	154
1904	133	19	10	3	1	166
1905	129	18	9	3	1	160
1906	130	18	9	3	1	161
1907	131	17	8	3	2	161
1908	123	16	8	2	3	152
1909	117	14	8	2	3	144
1910	111	13	7	1	1	133
1911	101	12	7	..	..	120

During the past seven years, 64 medical colleges have ceased to exist, either through merger or otherwise. During the same time, however, 18 new colleges were organized, leaving a net decrease of 46. While the total number of colleges is smaller, the percentage of higher-grade, stronger medical colleges, has been considerably increased.

LENGTH OF TERMS

The length of term of each college fluctuates somewhat from year to year, but on the whole, during the last eleven years there has been a decided lengthening of college terms. This has reference to the weeks of actual work, exclusive of holidays. There were no colleges this year which reported sessions shorter than twenty-seven weeks, whereas in 1901 there were 58. There were only 6 colleges having sessions of twenty-seven or twenty-eight weeks, or 2 less than last year, and 40 less than in 1903. There are 16 colleges claiming courses of twenty-nine or thirty weeks of actual work, and 37, the largest number, claim courses of thirty-one or thirty-two weeks. Of the 120 colleges now existing, 97, or over 80 per cent., now claim to require from 31 to 36 weeks of actual work, exclusive of holidays, as compared with 30 per cent. in 1901, 42 per cent. in 1904, and 76 per cent. last year. The one college claiming a course longer than thirty-six weeks is a night school. It would require twelve or fourteen years of the usual night-school study, however, to obtain the equivalent of four years of thirty weeks each in one of the better day colleges.

TABLE 8.—COLLEGE TERMS

	23 to 26 weeks.		27 to 28 weeks.		29 to 30 weeks.		31 to 32 weeks.		33 to 34 weeks.		35 to 36 weeks.		Over 36 weeks.	
1901	58	36.5	42	26.4	8	5.0	26	16.4	4	2.5	18	11.3	3	1.9
1902	44	28.4	44	28.4	11	7.1	33	21.3	3	1.9	16	11.6	2	1.3
1903	32	21.4	46	29.9	15	9.7	37	24.0	2	1.3	19	12.4	2	1.3
1904	27	16.3	44	26.5	22	13.3	37	22.3	13	7.8	20	12.0	3	1.8
1905	15	9.4	35	21.8	12	7.5	44	27.5	13	8.1	38	23.8	3	1.9
1906	14	8.7	35	21.7	26	16.1	32	19.9	24	14.9	28	17.4	2	1.3
1907	6	3.7	27	16.8	26	16.1	42	26.1	29	18.0	29	18.0	2	1.3
1908	2	1.3	21	13.8	28	18.4	51	33.6	24	15.8	22	14.5	4	2.6
1909	4	2.3	17	11.6	23	16.4	51	34.9	18	12.3	30	20.5	3	2.0
1910	2	1.5	8	6.0	19	14.3	42	31.5	30	22.6	30	22.6	2	1.5
1911	..	..	6	5.0	16	13.3	37	30.8	32	26.7	28	23.4	1	0.8

TUITION AND OTHER FEES

Special attention is called in Table 1 to the total amount charged by the various colleges for tuition, matriculation, laboratory and graduation fees per annum for each student. In Table 9, the 120 colleges have been grouped according to the amount of fees charged and according to their grouping by the Council on Medical Education in Classes A, B, or C.

Thirty-five colleges charge fees of $100 or less per year, 70 colleges charge between $100 and $175, and 15 colleges charge above $175. Of the 35 colleges charging $100 or less, 18, or over 50 per cent., were listed among Class A (acceptable) colleges[1] by the Council on Medical

1. For complete classification see THE JOURNAL A. M. A., June 18, 1910, pp. 2061 and 2062.

TABLE 9.—College Fees

Total Fees.	Number of Colleges. Class A.*	Class B.	Class C.	Total.
$ 50 or less	2	..	..	2
50 to $ 75	8	2	..	10
75 to 100	8	6	9	23
100 to 125	14	10	10	34
125 to 150	13	7	..	20
150 to 175	12	2	2	16
175 to 200	9	1	..	10
200 or above	4	..	..	5

* Based on the classification of medical colleges prepared by the Council on Medical Education.

Education, 8 were among Class B colleges, and only 9 of them are found among the Class C colleges. Among the 18 Class A colleges having these low fees are to be found the schools of medicine of the state universities of Colorado, Iowa, Mississippi, Missouri, North Dakota, South Dakota and Utah. On the other hand, 12 colleges listed by the Council in Class C charge fees of over $100 per year for each student. This clearly refutes the assertion made by some inferior colleges that they are needed for the sake of "the poor boy who wants to study medicine." Although 25 colleges listed in Class A charge fees ranging from $150 to $275 per year for each student, the actual expense for teaching that student in these colleges ranges from $300 to $600 or even more per year.

TABLE 10.—Students and Graduates, Totals by States

State.	Students. Men	Women.	Graduates. Men.	Women.	Graduates with B.S. or A.B.
Alabama	360	1	71	..	7
Arkansas	229	2	76	..	7
California	379	38	65	7	12
Colorado	143	9	36	3	14
Connecticut	83	..	20	..	6
District of Columbia	412	10	59	2	11
Georgia	819	2	168	..	8
Illinois	2,538	124	513	23	102
Indiana	179	9	50	2	4
Iowa	197	11	38	3	8
Kansas	129	8	25	3	1
Kentucky	472	..	169	..	..
Louisiana	302	1	90	..	24
Maine	67	..	13	..	5
Maryland	1,295	37	315	10	94
Massachusetts	853	74	178	19	91
Michigan	514	22	120	3	22
Minnesota	168	10	31	..	8
Mississippi	145	..	19	..	1
Missouri	971	21	225	9	21
Nebraska	281	21	56	6	6
New Hampshire	42	..	11	..	5
New York	2,231	75	405	18	76
North Carolina	319	2	46	..	4
North Dakota	34	5	..	..	..
Ohio	763	25	170	3	29
Oklahoma	57	6	13	2	..
Oregon	114	5	19	..	2
Pennsylvania	1,910	123	453	36	81
South Carolina	201	2	48	1	7
South Dakota	7	..	..	..	..
Tennessee	1,391	10	308	2	25
Texas	411	15	112	3	5
Utah	18	1	..	..	..
Vermont	189	..	40	..	2
Virginia	438	..	93	..	17
West Virginia	13	..	..	..	..
Wisconsin	345	11	60	4	..
Totals	19,106	680	4,114	159	705

DISTRIBUTION OF MEDICAL STUDENTS

Table 2, on pages 646 to 649, shows from what states the students come who were in attendance at each medical college during the session of 1910-11. The influence of the proximity of the medical school is seen in the fact that states having medical colleges contribute more students in proportion to the population than those which have no colleges, as shown by the dark zone of larger figures running diagonally down the page. A comparison of this table with the large tables based on state board examinations[2] which show the distribution of the alumni of each college, is interesting. The college which has widely distributed alumni usually has a student body from an equally large number of states.

The state furnishing the largest number of students this year was New York, with 2,162. Pennsylvania contributed 1,799 and Illinois 1,598. The next states, in the order of the number of students contributed, are: Ohio, 859; Massachusetts, 819; Texas, 704; Missouri, 620, and Indiana, 503. Four states had less than 20 each, these being New Mexico and Wyoming, each 11; Arizona 10, and Nevada 4. There were 59 students from Hawaii, Porto Rico and the Philippine Islands and 579 students from foreign countries.

In Table 3, on pages 650 and 651, the totals coming from each state for the last four years may be seen. For instance, the number coming from New York has remained nearly the same, over 2,100 for each of the four years, while the number from Pennsylvania has decreased from 2,159 in 1909 to 1,799 in 1911. Illinois, also, shows a decrease from 1,749 in 1908 to 1,598 in 1911. On the other hand, a few states, for example Rhode Island, North Dakota, South Dakota and Georgia show an increase. In the last-named state, this may be due to the continuation of low educational standards.

MIGRATION OF MEDICAL STUDENTS

Table 3 also shows the number of students of each section of the country who attended medical schools of that section, and the number who attended medical colleges of other sections. Section A gives the figures for students from the eastern states; Section B, for students from the middle states; Section C, for students from the western states, and Section D, for students from the southern states. Figures are given for the four college years 1907-8, 1908-9, 1909-10 and 1910-11. The differences in the figures for the four years show the fluctuation due to the exit of the graduating classes, to the ingress of the new freshmen and to the comparatively few who left the colleges of one section and went to those of other sections. At the bottom of Section D appear the averages of the totals for the four years. Percentages are given in order to permit of comparisons. The eastern section has long held the largest place in medical education, and, as would be expected, still has the smallest percentage of students leaving to attend colleges in other sections, the percentage of those remaining in the eastern section being 92.3. The middle section is a close second, with 90.5 per cent. of its own resident students studying medicine in the home section. The southern section has 83.8 per cent. of its medical students

2. The Journal A. M. A., May 27, 1911, p. 1566.

studying in its own colleges, while the western section, having the smallest number of colleges, naturally has a smaller proportion of students (55 per cent.) attending in that section. Of the students who migrate from the middle and southern sections, the largest proportions go east while of those from the western section, the largest proportion attends colleges of the middle section. Altogether 2,330 students attended colleges outside of the section in which they lived during the session of 1910-1911. Of this number 998, or 42.6 per cent., went to the eastern section; 895, or 38.6 per cent., went to the middle section; 237, or 10.2 per cent., went to the southern section, and 200, or 8.6 per cent., went to the western section.

THE YEAR IN MEDICAL EDUCATION

There have been several important developments in medical education during the past year. One was the beginning of the requirement for admission of one or two years of collegiate work by 22 of the better-class medical schools of the United States, making a total of 41[3] which are now enforcing the higher standard. Another important development was the action taken by the Association of American Medical Colleges providing that after Jan. 1, 1912, students with entrance conditions are not to be accepted by colleges in membership in that organization. One more state licensing board, that of Utah, adopted as its minimum requirement of preliminary education a year of collegiate work, and the board of Colorado has increased its requirement from one to two years of collegiate work. There are, therefore, nine states[3] that have adopted this higher standard of preliminary education. Another feature of the year is the increased development of special courses in tropical medicine and in public health work.[4] Still another, and probably the most important feature of the year, however, is the large amount of money given for medical education.[5] The amount probably exceeds the gifts of any previous year, and insures an even greater development for medical education in the immediate future. Indeed, the outlook for medical education from every point of view is very encouraging.

DICTATOR McCABE

When it was first announced that Congress had called for an investigation of the facts leading to the charges preferred against Dr. Wiley by Messrs. McCabe, Dunlap and Wickersham, THE JOURNAL expressed the opinion that no one would welcome such an investigation more than would Dr. Wiley, unless it was the general public. Although the body created by Congress to look into this matter has been in existence but a few days, the mass of evidence already presented shows how accurate THE JOURNAL'S statement was. Every point brought out so far has put Dr Wiley in a still more favorable light, while at the same time it has proved how well founded is the lack of confidence which the public has in those who are fighting him. It has been shown conclusively that Secretary Wilson — unknowingly, probably — has been a passive tool of those vast interests which have made their millions by poisoning the country's food and sophisticating its drugs.

The active partner in this attempt to nullify the national pure food law and make its action abortive is Solicitor McCabe. According to the evidence presented, McCabe both falsified and expurgated the account of a court proceeding in at least one pure food case. A firm pleaded guilty to the charge, brought by Dr. Wiley's assistants, that certain soft drinks contained "cocain, benzoic acid and coal tar dye." Mr. McCabe would not permit this judgment to be made public in that form, but when the printer's "proof" came he erased the words "benzoic acid" and substituted the word "caffein." This, of course, makes the government report of the case an official falsehood, but apparently McCabe feels that falsifying is permissible when it is done in the interest of the conservation of sodium benzoate. The fact of the matter is, the real power behind the throne—so far as the administration of the Food and Drugs Act is concerned—is Solicitor McCabe. By framing and manipulating the departmental rules with all the skill of a pettifogging lawyer, he has put himself in a position of being sole judge whether cases against food "dopers" and "patent-medicine" fakers should or should not be prosecuted. Dr. Wiley's bureau investigates cases of food adulteration and drug misbranding, carefully and scientifically examines the products and submits evidence to show that certain foods or drugs are adulterated or misbranded. Mr. McCabe, by the autocratic use of powers that he has delegated to himself, may bury in the government files all the evidence submitted. That he has thus withheld from the courts evidence of violations of the law has been shown at the present congressional investigation.

It is not surprising that a man who could thus "protect" manufacturers who might have been proved guilty, should have altered the court's decrees when such decrees brought out facts regarding sodium benzoate that were distasteful to him and the "interests" he serves. The exercise of this autocratic power, which has long been known to those who were conversant with the inner workings of the Department of Agriculture, may explain why the New Hartford Canning Company, of which Vice-President Sherman is the reported head, was not prosecuted for selling short-weight products even though evidence to that effect had been collected by Dr. Wiley's assistants. It may also explain why the cases against the Duffy Malt Whiskey fraud, Kilmer's Swamp Root and scores of other similar preparations have never been brought to the courts.

The American people, after having fought for over seventeen years to get the Food and Drugs Act on the

3. See list on page 641.
4. See page 653.
5. See items on pages 650 to 652.

federal statute books, finally succeeded—thanks largely to the aggressiveness and honesty of the chief of the Bureau of Chemistry. That act, although not so strong or comprehensive as it might be, can still furnish a large degree of protection to the public. At the outset the chief of the Bureau of Chemistry tried vigorously and unflinchingly to enforce it. Such enforcement against vested wrongs and opulent dishonesty was distasteful to those in high places. The fortunes that might be made by polluting the food-supplies of the country and by the manufacture of "patent-medicines" were not to be abandoned without a struggle. Pressure was brought time and again to secure Dr. Wiley's removal, but in each case it was found that that official was too strongly entrenched in the hearts of the great American public to be removed on any mere trumped up charge. When the present charges were made against Dr. Wiley, the public and the press showed that they had confidence in him. The investigation that was demanded, and that is now being carried on, is proving as rapidly as possible that the judgment of the press and of the public is to be relied on. Dr. Wiley will come out of the case stronger and better loved than ever. His traducers, we believe, will be relegated to that political oblivion to which they belong.

PHYSIOMEDICALISM

As will be noticed elsewhere in this issue, the last of the colleges which represented the physiomedical sect has gone out of existence. This sect has endured for three-quarters of a century and was one of the "schools" of medicine which have existed only in this country.

According to its adherents, physiomedicalism was founded in New England early in the last century by Samuel Thomson (1769-1843), a native of New Hampshire. Thomson was a self-educated man, a student of nature, who strongly advocated care of the stomach, good food and proper elimination together with vapor baths and sweating and also employment of certain botanic drugs such as lobelia, marigold and yellowroot. Many of his principles and methods are matters of common sense and, in fact, were not uncommonly employed by other successful physicians. The emphasis which was laid on them in a special book circulated by Thomson, however, no doubt led to the formation of this particular school of medicine and also drew into it a number of very able men, some of whom, from the educational standpoint at least, were destined to have a wider influence than Thomson himself.

Thomson was not altogether unselfish, however, in his efforts to cure the ailments of a suffering humanity. He secured from the government a patent giving him the exclusive use of certain medicines of which he was recognized as the original discoverer. Thereupon he began a systematic monopoly betraying more selfishness than his friends were prepared to witness. Two small books outlining his principles and methods of treatment were sold for twenty dollars, including a written permit to one family to use his medicines. Agencies were established in all the principal cities and so-called botanic societies, made of holders of permits, organized. The income from this business must have been enormous. One agent alone in about three years' time is said to have collected about $80,000. Although enabled for many years by his patent rights to control this profitable enterprise, in time infringements became numerous and the latter part of Thomson's life was largely spent in contentions with his agents.

Although Thomson is recognized as the founder of physiomedicalism, he really opposed the formation of colleges. Dr. Alvin Curtis, who organized the first physiomedical college in 1838, had aroused Thomson's enmity by advocating a more thorough medical education. The first college was located at Columbus, Ohio, but was removed to Cincinnati, in 1841, where it continued under varying fortunes until about 1880. Other colleges known as "Thomsonian," "botanico-medical," or "physiomedical" colleges were organized later in Georgia, Massachusetts, Illinois, Indiana and Texas. So far as it is known no colleges were organized outside of the United States. Only about twelve colleges altogether were organized, omitting a fraudulent concern which was organized in Oklahoma, and only three or four were existing at any one time. Only three have been in existence since 1900, one each in Illinois, Indiana and Texas.

Medicine of to-day is more largely based on scientific facts and there is less room for the differences of opinion which in earlier times led to the formation of medical sects. Formerly valuable principles in the treatment of disease may have needed the emphasis which medical sects laid on them, but not so to-day. In this day of the microscope, the special laboratory test, of full-time instructor and of medical research, all methods will be put to the test, the good will be utilized and the useless will be discarded. Sectarianism, dissension and doubt must give way to scientific facts and to certainty.

SEVEN YEARS' PROGRESS IN MEDICAL EDUCATION

Those who have been watching the development of medical education in this country have noted with no little astonishment and gratification the remarkable progress that has been made in recent years and particularly since the American Medical Association created its permanent committee, the Council on Medical Education. At the beginning of its work in 1905, after a thorough investigation of conditions, the Council formulated two standards of medical education, one for immediate adoption and an ideal standard for future consideration. These standards were not for any one state or for any one section, but for the entire country. The result is that nearly all colleges are up to or beyond the standard recommended in 1905 for "immediate

adoption," while more than a third of the colleges (42) have, so far as entrance requirements are concerned, adopted the "ideal," namely, a four-year high school education, plus at least one year to include thorough courses in physics, chemistry, biology and modern languages.

During 1906 and 1907, the Council made the first complete personal tour of inspection of the medical colleges of the United States that had ever been made, and in 1907, reported its findings at its annual conference and to the House of Delegates of the American Medical Association. This inspection revealed the fact that nearly a third of the medical schools existing at that time were seriously defective in their methods, standards and equipment. Since that report was made the decrease in the number of these inferior colleges has been marked, while on the other hand, there has begun a corresponding improvement in many other colleges. The second inspection was completed in 1910, and resulted in the publication of a classified list of medical colleges. This doubtless gave added impetus to the improvements being made and to the further elimination of unworthy colleges. In seven years, therefore, the over-supply of medical schools has been reduced in number, quantity giving way to quality, and a decided check has been placed on the rapid multiplication of inferior schools.

In 1908 and 1909, a thorough study of the medical college curriculum was made by a special committee of the Council, made up of over a hundred leading medical educators, to ascertain the relative value of the subjects of the curriculum in order that proper emphasis might be laid on them in the medical course. This special study also included the character of equipment, methods of instruction, qualifications of teachers, necessary hospital facilities, etc. As a result of this and the Council's reports based on its actual inspection, an unprecedented improvement in the physical equipment and methods of medical education was started. New college buildings have been erected; more teaching hospitals have been secured; new laboratories have been equipped and more expert full-time teachers employed.

During each of the seven years the Council has held a special, delegated conference attended largely by members of state licensing boards, university presidents, representatives of medical colleges and other prominent educators. These conferences have had a wide and powerful influence in the progress that has been made. They have resulted in more uniformity of effort on the part of all forces working for the betterment of educational standards and have provided opportunity for the study and discussion of educational problems. Above all, however, at these conferences, the attention of university presidents and others has been drawn to the absolute necessity of state aid or private endowment for medical schools. As a direct or indirect result of this campaign, the amount of money given for medical education has increased from a few thousands of dollars during 1904 to several millions of dollars during the last year. This is indeed encouraging and gives promise of even greater advancement in the immediate future.

Of course, not all the credit for these vast improvements belongs to the Council on Medical Education. Nevertheless this body, representing the organized profession of the country and holding up standards of national and not sectional scope, was bound to have a powerful influence. It has cooperated with the other agencies which have been doing masterly work in their various fields, and has brought about greater harmony and more unanimity of effort. These achievements are the more gratifying since all the agencies save one, the Carnegie Foundation for the Advancement of Teaching, are entirely made up of physicians and fully represent the medical profession. Meanwhile, no one is better acquainted with the needs of the people in regard to the prevention and cure of disease and the preservation of health and healthful conditions than the medical profession itself. And that the medical profession may be even more capable of caring for these needs, nothing is more important than the continued improvement of medical education.

Current Comment

RADIO-ACTIVE MENTHOL-IODIN OR DIORADIN

Another consumption cure! This time it is one of the semi-ethical, quasi-respectable type brought out by a European physician, delivered to the world *via* sensational newspaper articles in which the "chemical name" of the preparation is emphasized and the proprietary name kept in the background. The latest panacea is marketed under the proprietary name Dioradin and is described by its "discoverer" as "radio-active menthol-iodin." Professor de Szendeffy of Budapest is the originator of the new "specific"; Drs. Samuel Bernheim and Louis Dieupart of Paris seem to have been the ones selected by Professor de Szendeffy to deliver the news of the wonderful discovery to the public—and incidentally to the profession. Dioradin comes in boxes of six ampoules, price $3.60. It is administered intramuscularly. Its composition, as described both in the American newspapers and in the European medical journals, is said to be:

Peptonized iodin	0.75 cg.
Menthol	0.06 cg.
Radium-barium chlorid in ethereal solution	1/10 drop

Of course, what peptonized iodin is, no one but the inventor of Dioradin seems to know. Radium-barium chlorid may be a definite product, but there is a delightful vagueness regarding the strength of the "ethereal solution" that is employed. The same vagueness is found in the description of cases in which the "cure" has been tried. Glittering generalities abound and, while these make interesting newspaper reading, they are very unsatisfying to the physician who would like definite, scientific evidence. Possibly Professor de Szendeffy has a remedy that may prove of moderate value in the treatment of tuberculosis; if so, it is unfortunate both for the public and for scientific medicine that it has been

introduced by such crude methods. As the London *Lancet* says, in summing up the case against this much-vaunted remedy: "The exploitation in the lay press of immature work in regard to any medical question is particularly to be deprecated. Hopes are raised in the minds of many sufferers which are fore-doomed to disappointment, more especially when they rest on such slender foundation as the treatment here suggested."

THERE'S A REASON

Our readers will remember that when the manufacturer of Postum Cereal and Grape-Nuts was forced to show his hand, it developed that the only "famous physician" whose name was signed to a Postum testimonial "turned out to be a poor old broken-down homeopath, who is now working in a printer's establishment," and who received $10 for his testimonial. These facts came as a surprise to those who are familiar with the testimonial business. When one considers how easy it is to get physicians of a certain class to write testimonials for any food or medicine bearing a proprietary name, it seems strange that Mr. Post should have had such a poor collection. Since the trial, at which these facts were brought out, this enterprising breakfast-food manufacturer has been endeavoring, apparently, to remedy the deficiency that existed in his advertising department. Unsigned testimonials from physicians are being published, the names and addresses to be furnished on application. How such testimonials are obtained, we do not know. A possible explanation has been suggested by physicians who have sent in some letters to THE JOURNAL. These letters consist of personal communications from the *American Journal of Clinical Medicine (née Alkaloidal Clinic)* to physicians over the country and read as follows:

Dear Doctor: The advertising of Postum and Grape-Nuts has been appearing in *Clinical Medicine* for the past ten years. We have always believed in the purity of these products. In fact, we have used them ourselves and have recommended them extensively.

Will you cooperate to the extent of giving us your opinion of these products? Have you used them personally and have you recommended them to your patients, and with what results?

Your reply, using the stamped return envelope enclosed, will be appreciated.

Yours sincerely,

THE AMERICAN JOURNAL OF CLINICAL MEDICINE.

A study of the wording of this letter makes it plain that only those physicians who hold the same favorable opinions regarding Grape-Nuts and Postum that are held by the *American Journal of Clinical Medicine* will be likely to answer this ingenuous appeal. Such testimony, of course, will please not only Mr. Post, but those publications that wish some excuse for participating in the benefits of his million-dollar advertising campaign. Six years ago THE JOURNAL showed that Duffy's Malt Whiskey was being advertised by means of fraudulent testimonials. Since that time the Duffy concern has worked up a nice line of bona fide testimonials from not-too-particular physicians. The task, apparently, was neither difficult nor expensive. History is about to repeat itself, it seems, in the case of Postum and Grape-Nuts. The spectacle is not a pretty one and is somewhat disheartening to those who would believe that the medical profession is becoming more cultured and scientific. We hesitate to believe that, in his search for testimonials, Mr. Post felt impelled to enlist the help of that particular journal. While to collect such testimony through such an instrumentality may be perfectly logical, the ease with which it may be otherwise obtained makes it quite unnecessary.

DR. FRANK P. FOSTER

Our obituary columns this week contain the announcement of the death of Dr. Frank P. Foster, for over thirty years editor of the *New York Medical Journal*. Dr. Foster, since the death of Dr. George F. Schrady a few years ago, has been recognized as the dean of the medical editors of this country. Dr. Foster's energies were varied, but especially literary in character. Aside from his contributions to the periodical of which he was editor, he has written several books, and has contributed to many others. As a monument of his literary labors may be mentioned the "Encyclopedic Medical Dictionary" which bears his name, a four-volume book that has been translated into seven different languages. Dr. Foster was a moral and intellectual force in medical literature. Until recently he took an active interest in all that related to medicine, and his influence was always in the right direction. His friends count it a privilege to recall his fine character, his charitable judgment, his facile pen and his ever-ready assistance so freely given from his great store of knowledge.

AMERICAN MEDICAL DIRECTORY—THIRD EDITION

In this week's JOURNAL appears an insert announcement of the third edition of the American Medical Directory; now in course of preparation. Since the publication of the second edition in the fall of 1909, a large amount of additional data has been secured regarding medical schools, hospitals and public institutions, professional organizations and especially regarding physicians themselves. The material which was obtained for the two previous editions has been carefully revised and corrected. The work which has been done insures a third edition which will be fuller, more complete and more accurate than either of the preceding editions. Based on the only firm foundation which we have in this country, viz., the records of the state licensing boards and the alumni lists of medical colleges, making no distinction between classes of physicians so far as information is concerned and containing three times as much data as any other medical directory published, the American Medical Directory is recognized as the standard official authoritative directory of the medical profession of the United States and Canada. It is the only national directory published as a non-commercial enterprise and must be issued for some time to come at a financial loss. Much expense has been incurred by the Association in getting the fundamental data covering especially the school of graduation and license. The publication of such a reference book is of direct interest and value to every American physician, medical college and hospital. We earnestly bespeak for this very important work the support of every member of our profession. It is hoped that each physician who is asked to

assist in furnishing information will respond willingly and promptly. By united effort and cooperation it will be possible to make this publication a realization of the ideal for the attainment of which it was inaugurated, namely, an official and accurate roster of the American medical profession.

LESLIE'S WEEKLY—A CONSISTENT JOURNAL

The clipping bureau service of the American Medical Association is a most complete one. We receive, daily, hundreds of clippings from the various newspapers all over the country. Since the abortive attempt of Messrs. Wickersham, McCabe and Dunlap to oust Dr. Wiley has become public property, we have received newspaper items on the subject literally by the thousand. The unanimity with which the press of the United States has supported Dr. Wiley in his present fight is a surprise even to those who know how well the chief of the Bureau of Chemistry deserves such support. Among the one or two news items and editorial comments that show their writers to be unfriendly to Dr. Wiley and antagonistic to his work, one appeared in *Leslie's Weekly*, which expresses itself in part as follows:

"Dr. Wiley is not the author of the pure-food law. It would continue to be enforced whether he were in the public service or not. He has occupied a subordinate place in the department, but has always managed to make it appear that he was the only champion of pure food at Washington. The public may rest assured that the pure-food law will be enforced just as vigorously and earnestly whether Wiley stays or goes."

This editorial statement is one that those who are familiar with *Leslie's Weekly* would logically expect to find in that publication. The antagonism of some journals is to be desired rather than their approbation; *Leslie's* is one of them. For years there have appeared at intervals speciously written "special articles" in this publication, devoted to the exploitation of "patent medicines" and quackery. Oren Oneal, the eye quack of Chicago, the wide-spread fake Viavi, and the Alexander cancer cure—each of these in turn has been the subject of fulsomely laudatory articles appearing in *Leslie's Weekly*. Under the circumstances, it is evident that this journal's antagonism to Dr. Wiley is one more point in that gentleman's favor. Had it expressed itself in the same terms of warm commendation that have characterized the editorial expressions throughout the country generally, it would have been a grave embarrassment to the chief of the Bureau of Chemistry. In the estimation of the public, one of Dr. Wiley's greatest assets is the character of the enemies he has made. The opposition of the food dopers and the "patent-medicine" makers has long been known; *Leslie's* having lined itself up with its logical associates, the public will find one more reason for upholding Dr. Wiley.

INTERESTING DETAILS COMING

The investigation by a congressional committee of the charges against Dr. Wiley is bringing out some interesting details. When the hearing is over, we shall probably publish such part of the evidence as will prove of value to physicians.

EDUCATIONAL PROGRESS IN GEORGIA

By recent legislation the Medical College of Georgia, located at Augusta, has been made an integral part of the University of Georgia. The people of Augusta had already awakened to the needs of its medical school and had raised $46,000 by subscription for its equipment. The city of Augusta has agreed to erect a new city hospital at a cost of $200,000 on the campus of the medical school and has further agreed to place it under the perpetual and unrestricted control of the medical faculty as a teaching hospital. It was doubtless this energetic action by the city and people of Augusta which won for them favorable action by the Georgia legislature. It is to be hoped that this action creating a state-supported medical school will lead also to the securing of better legal standards of medical education and licensure in that state. Georgia cannot well afford to assume the responsibility of furnishing a good training for those who are to have in charge the lives and health of the people of that commonwealth, and at the same time leave the people unprotected against the ignorant and poorly trained graduates of low grade colleges of that and other states.

Medical News

ARKANSAS

Society to be Organized.—The North Arkansas Four Counties Medical Society is to be organized at a meeting to be held at Hardy, September 6 and 7, under the auspices of the Sharp County Medical Society.

Railway Surgeons Meet.—At the semi-annual meeting of the surgeons of the Missouri and North Arkansas Railroad, Dr. Hugh L. Routh, Batavia, was elected president, and Searcy was selected as the next place of meeting.

Personal.—Dr. William T. McCurry, Texarkana, with his wife and daughter, sail for Europe next week.——Dr. A. G. Thompson, Pine Bluff, physician for the Sawyer and Austin Lumber Co., has resigned, to take effect September 1.——Dr. Monroe D. McClain, Little Rock, has been elected state physician of the Modern Woodmen of America.

Typhoid in Little Rock.—Surgeon W. H. Frost, Public Health and Marine-Hospital Service, who has been making an investigation of the typhoid situation in Little Rock, reports that while it is true that Little Rock has suffered during the last two months from an epidemic of typhoid fever, there is no need for alarm in this regard in the city as the number of cases is steadily on the decline.

CALIFORNIA

Branch Society Meets.—At the annual meeting of the Santa Monica Branch of the Los Angeles County Medical Association, Dr. John A. Balsley, Santa Monica, was elected president; Dr. H. Wilson Levengood, Ocean Park, vice-president, and Dr. George A. Fielding, Sawtell, secretary-treasurer.

Medical Society Condemns Lodge Practice.—The Santa Clara County Medical Society, at its annual meeting, July 19, is reported to have adopted amendments to its by-laws condemning the practice of members of caring for lodge members on the contract plan. The amendments allow members of the society to care for railroad contract work and work in boarding schools and in charitable institutions.

New Home for Lane Library.—The Lane Library is soon to be housed in a new three-story building to be erected on the corner of Sacramento and Webster Streets, San Francisco, at a cost of $100,000. The building will be ready for occupancy at the end of the school year and will accommodate the Lane Medical Library which was founded by Dr. Lane, former president of Cooper Medical College, and the medical library of Leland Stanford University.

COLORADO

No Public Drinking Cups.—The law prohibiting common drinking cups in public places is now in effect in Colorado.

Bubbling fountains have in many places taken the place of the cups.

New Hospital Wing Opened.—The new wing of the Denver County Hospital has been formally opened. The building has cost $120,000 and will accommodate eighty patients, and contains a laboratory, maternity wards, children's wards and operating rooms.

State Dairy Law.—The new state dairy law forbids the handling of milk in storerooms where oil, poultry or vegetables are kept. Preservatives are barred. The dealer with one cow, selling milk to his neighbor is under the same regulations as the large dairyman and must obtain a license. Milk cans are not allowed to stand at railroad stations for more than one day.

Health Train for Colorado.—The State Board of Health has announced its intention of adopting the method used by the Louisiana State Board of Health for the promulgation of information regarding health and sanitation and expects to start a special health train on a tour of Colorado about January 1. During the tour, which is to be educational, demonstrations regarding pure food, health and sanitary matters will be made, lectures will be delivered and literature will be distributed.

GEORGIA

Open-Air School Established.—The first open-air school to be established in the South will be opened in Atlanta next month under the auspices of the Ninth Avenue Presbyterian Church.

City Hospital Planned.—A movement has been inaugurated by the citizens of Dublin for the establishment of a hospital in that city. James M. Finn has been appointed chairman and R. M. Martin, secretary of the committee on the hospital enterprise.

District Meeting.—At the annual meeting of the First District Medical Society held at Atlanta, August 7, the following officers were elected: president, Dr. Edward T. Coleman, Greymont; vice-presidents, Drs. Lorin V. Strickland, Cobbtown, and John W. Daniel, Savannah; and secretary-treasurer, Dr. John M. Sigman, Savannah.

Medical College Directors Named.—The governor has appointed the following directors of the Medical College of Georgia, Augusta: Hon. A. L. Miller, Macon; Hon. Enoch H. Calloway, Augusta; Hon. John T. West, Thomson, and Hon. William A. Lattimer, Augusta, for two years, and Hon. P. A. Stovall, Savannah, and Hon. L. C. Hayne, Augusta, for six years from August 3, 1911.

Medical Scholarships Announced.—Scholarships in the Medical College of Georgia, Augusta, have been bestowed on twenty-six young Georgians by the governor as follows: first district—D. C. Colson, Sylvania, Screven County; Gordon Herrington, Nunez, Emanuel. Second district—T. P. Brown, Beachton, Grady; E. M. Walker, Tifton, Tift. Third district—W. B. Watts, Jr., Byromville, Dooly; C. C. Frederick, Wellston, Houston. Fourth district—Arthur H. Drane, Buena Vista, Marion; J. C. Bonner, Carrollton, Carroll. Fifth district—Nathan G. Rice, Atlanta, Fulton; J. C. Savage, Jr., Atlanta, Fulton. Sixth district—Linn C. McAfee, Macon, Bibb; B. W. Freene, Haddock, Jones. Seventh district—Arthur Horton, Ranger, Gordon; Egbert M. Townsend, Tilton, Whitfield. Eighth district—Wilbur Gibson Jenkins, Eatonton, Putnam; Earle Newsom, Union Point, Greene. Ninth district—J. W. Wallace, Commerce, Jackson; T. L. Holcombe, Statham, Jackson. Tenth district—William V. Verdery, Harlem, Columbia; John R. Lewis, Sparta, Hancock. Eleventh district—J. C. Carter, Jr., Dublin, Laurens; Warren L. Hall, Nicholls, Coffee; and at large—Robert C. Montgomery, Junction City, Tolbert; J. L. Logue, Louisville, Jefferson; Garnet Edwards, Crawfordville, Taliaferro, and Fred Ware, Wrightsville, Johnson.

ILLINOIS

New Asylum Site.—The State Board of Administration has had drafted the itinerary of a trip to visit the seventy-one sites offered for the new state insane hospital for which $1,500,000 has been appropriated by the legislature.

Hospital Closes.—The Franciscan Sisters' Hospital, Highland, known as St. Joseph's Hospital, closed its doors temporarily, August 9, on account of lack of funds. The Sisters claim that they are obliged to accept a certain percentage of charity patients and that for the county patients the hospital receives only 50 cents a day for the first fifteen days and 20 cents a day thereafter.

The New Cook County Hospital.—Preliminary plans for the new Cook County hospital have been completed by the county architect. The main portion of the new structure, first to be erected, will cost between $2,000,000 and $3,000,000. It will be nine stories high, 950 feet long and 59 feet wide, fronting on Harrison Street, and will accommodate approximately 1,300 patients. On the ninth floor of the building will be seven operating rooms and two amphitheaters, together with the necessary anesthetic and recovery rooms, etc. There will also be four roof-gardens at the disposal of the patients.

Personal.—Dr. John A. Pratt, Aurora, has been appointed oculist for the Aurora division of the Burlington system. ——Dr. James A. Rutledge, Elgin, has been appointed medical director of the Modern Woodmen's Sanatorium, Colorado Springs, and will assume charge about September 1. At present the sanatorium accommodates 180 patients, but when completed the capacity will be 400.——Dr. Elmer E. Nystrom, assistant physician of Peoria County, who has been dangerously ill with an infection of the ear, is convalescent.——Dr. Charles B. Dirks, a member of the staff of the Kankakee State Hospital, has been appointed assistant superintendent of the Elgin State Hospital.——Dr. Charles E. Crawford, Rockford, has been elected grand medical examiner of the Sons of St. George, Illinois jurisdiction.

Chicago

Health Exhibit Goes to Canada.—The Chicago Department of Health has decided to send its health exhibit, in charge of Dr. C. St. Clair Drake, to the Canadian National Exposition which is to be held in Toronto from August 25 to September 11.

Large Employers of Labor Oppose Tuberculosis.—The directors of the Chicago Tuberculosis Institute announce that they are ready, through their advisory committee on factories, to enter into practical cooperation with large employers of labor with a view to weeding out and treating employees suffering from tuberculosis and to the prevention of the spread of the disease among their fellow workers. A start has been made at the plant of the International Harvester Company and two of the largest mail-order houses already have established cottages for the treatment of employees suffering from tuberculosis.

Personal.—Dr. Ralph R. Campbell announces his return to Chicago and resumption of practice.——Dr. and Mrs. Wesley J. Woolston have returned from Europe.——Dr. Harry S. Gradle has been elected professor of ophthalmology in the Chicago Ear, Eye, Nose and Throat College.——Dr. and Mrs. Harry D. Orr have returned from Europe.——Dr. Frank Branen sustained painful injuries, August 6, in a collision between an automobile and a street car.——Dr. Joseph P. Smyth has been elected high chief medical examiner of the Catholic Order of Foresters.——Dr. Alexander Hugh Ferguson is reported to be seriously ill with septicemia due to a carbuncle.

INDIANA

Hospital Enlarged.—The Lutheran Hospital Association, Fort Wayne, has purchased adjoining property, the buildings on which, after remodeling, will be used for a maternity.

Raise Money for Hospital.—At a mass meeting of the citizens of Gary, August 7, $20,000 was raised for the assistance of Mercy Hospital in that city. This amount is needed to complete the new hospital building which will have cost when completed $100,000.

Personal.—The residence on the farm near Noblesville of Dr. Simon P. Scherer, Indianapolis, was burned, August 10.——Dr. Fred E. Jackson, intern at the City Dispensary, Indianapolis, has resigned.——Dr. G. S. Hobbs, intern at the Methodist Episcopal Hospital, Indianapolis, has completed his term of service and commenced practice in that city.——Dr. Lewis Maxwell, Indianapolis, has returned after a year abroad.——Dr. F. W. Hixon has been commissioned first lieutenant, medical corps, Indiana National Guard.——Dr. Jonas Stewart, Anderson, was thrown from his buggy in a runaway accident, August 4, and painfully injured.——Dr. Robert A. Bunch, Muncie, who has been seriously ill, is reported to be convalescent.——Dr. Joseph E. Showalter, Waterloo, has been appointed a member and secretary of the Waterloo school board.

IOWA

New State Journal.—Iowa has been added to the list of states whose medical associations publish journals. The *Journal of the Iowa State Medical Society* made its appearance, July 15, with Dr. David S. Fairchild, Clinton, as editor and Dr. Clyde A. Boice, Washington, as associate editor. The

first issue contains a report of the proceedings of the state medical society, the president's address, address on surgery, proceedings of the House of Delegates and a list of officers and directors of the state, district and county societies.

KENTUCKY

Gets Field Hospital Equipment.—The Kentucky State Guard has obtained from the War Department a field hospital equipment and has organized a field hospital with Major Charles W. Hibbitt, Louisville, in command.

New Sanatorium.—Work will be begun shortly under the provisions of the will of the late Dr. John A. Ouchterlony for the construction of a tuberculosis sanatorium on the grounds of the Sisters of Nazareth on the Newberg road about two miles from Louisville.

The State Board and Pellagra.—A special meeting of the State Board of Health was held at Corbin, August 9, to discuss the problem of pellagra, more than 100 cases of which have been reported from Bell and Whitely counties in addition to twenty-four cases reported from the Lexington and Hopkinsville state hospitals for the insane.

Transfer Patients from Hospital.—A contract for moving the inmates and the equipment from the old city hospital, Louisville, to the temporary hospital located in the building of the former Kentucky School of Medicine, will be awarded this week by the board of public safety. The patients suffering from tuberculosis will be moved to the Waverly Hills Sanatorium, as no provision is to be made in the new city hospital for cases of tuberculosis.

Personal.—Dr. Joseph M. Mathews, Louisville, has been appointed a member of the State Board of Health, vice Dr. William Bailey, deceased.——Dr. William A. Quinn, Henderson, has been appointed a member of the State Board of Health to succeed himself.——Dr. Henry Enos Tuley has resigned as professor of obstetrics at the University of Louisville and has been succeeded by Dr. William B. Doherty. Dr. Doherty has also been appointed a member of the State Library Commission.——Dr. Charles J. Lockhart, Owensboro, was seriously injured in a runaway accident, July 14.——Dr. Lee C. Redmon, Lexington, has been elected medical supervisor of the city schools.

LOUISIANA

A Good Record.—The president and secretary of the Caldwell Parish Medical Society announce that every physician in the parish is a member of the society.

Personal.—Dr. Stephen W. Stafford, New Orleans, intern in the Charity Hospital, was operated on in that institution, August 7.——Dr. Louis J. Genella has been appointed superintendent of the scout camp at Clairmont Harbor, vice Dr. Mayer Newhauser.——Dr. James F. Smith, Leesville, is reported to be ill at his old home in Eutaw, Ala.——Dr. William T. O'Reilly, chairman of the State Board of Health, has gone to Nicaragua for a vacation.——Dr. Erastus J. Lyons, Lake Charles, after practicing for fifty years in Calcasieu Parish, has retired from practice.——Dr. Cornelius A. M. Dorrestein has been appointed outdoor clinical assistant in the gynecologic and obstetric department of Touro Infirmary, New Orleans.——Dr. E. C. Samuel has been appointed junior in the department of radiology, and Dr. Abraham L. Levin, outdoor clinical assistant in the gastro-intestinal service of the department of medicine.——Dr. Frazer B. Gurd, junior pathologist of Touro Infirmary, has resigned.——Dr. Marion S. Souchon has been appointed a member of the board on administration of the charity hospital, New Orleans, vice Dr. George S. Bel, resigned.

MARYLAND

Baltimore

Zones of Quiet.—Alderman T. O. Heatwole has prepared an ordinance which will be introduced at the meeting of the city council in September. The ordinance will empower the city engineer to erect signs at intersections of streets in which there are hospitals or sanatoriums, and these will be known as "Hospital Streets." In such localities the ringing of street-car bells, the playing of street organs, crying of hucksters, etc., are prohibited under a penalty of a fine of $10.00.

Personal.—Dr. Richard C. Massenburg, Towsen, is ill with typhoid fever.——Dr. Robert Hoffman sailed for Germany, August 10.——Dr. Winford H. Smith, new superintendent of the Johns Hopkins Hospital, assumed his duties August 15, succeeding Dr. Henry M. Hurd who had been superintendent of the institution for fifteen years.——Dr. Charles Phillips Emerson, associate professor in medicine in Johns Hopkins University has accepted the deanship of the Indiana University School of Medicine, Indianapolis, vice Dr. Allison Maxwell.

MASSACHUSETTS

New Private Hospital.—A movement has been started in Boston by Drs. Arthur T. Cabot, William T. Councilman, Reginald H. Fitz, Joseph L. Goodale, Francis B. Harrington, Henry Jackson, Robert W. Lovett, John L. Morse, Edward Reynolds, Maurice H. Richardson, Frederick C. Shattuck, Edward W. Taylor, Paul Thorndike and J. Collins Warren to provide hospital facilities for private patients who are able to pay for the service they receive. It is proposed to offer $500,000 worth in stock and as much more in bonds in order to provide the funds necessary for this undertaking.

Officials of Hospitals.—Dr. Maurice H. Richardson has been appointed surgeon-in-chief of the Massachusetts General Hospital with Drs. Francis B. Harrington and Samuel J. Mixter as assistants, with the titles of chiefs-of-service. Dr. George Morse has been placed in supervision of the work of house officers with the title of house surgeon. Dr. Hugh Cabot will be placed in charge of the genito-urinary cases. The outpatient staff has been increased and now includes Drs. Channing C. Simmons, Samuel Robinson, Beth Vincent and John Homans with Drs. John B. Hartwell, Wyman Whittemore, Edward P. Richardson and William J. Mixter as assistants.——Dr. Herbert B. Howard is announced as superintendent, Dr. Harvey Cushing, surgeon-in-chief, and Dr. Henry A. Christian, physician-in-chief of the new Peter Bent Brigham Hospital.

The New Peter Bent Brigham Hospital.—Ground was broken, August 7, for the Peter Bent Brigham Hospital, which will eventually comprise fourteen buildings on Huntington Avenue and Francis Street, next to the Harvard Medical School. The late Peter Bent Brigham bequeathed about $1,000,000 to found a hospital in Boston "for the care of sick persons in indigent circumstances residing in the county of Suffolk." By the contract the buildings are to be complete in fourteen months. They are to be of brick and limestone. The main architectural features will be the administration building and its two flanking structures which will form an amphitheater. There will be five wards which will have their ground level only one low step above the ground. To the westward of the entrance court will be the dispensary building and the general clinical amphitheater, which will be connected by covered corridors with the administration building, the dispensary and the nurses' home. To the northwest of the administration building will be the domestic building in which all the food will be prepared for the hospital staff, nurses and patients, and this building will be connected by a corridor with the main building. Westward from the domestic building comes the surgical, medical and pathological buildings. The superintendent's house will be to the east of the medical building. The wards first to be built will accommodate 240 patients.

MICHIGAN

Bequests.—By the will of the late Henry A. Cleland, Detroit, $5,000 is left to the Children's Free Hospital, Detroit, and $3,000 to the Wayne County Medical Association.

Mason to Have Private Hospital.—A house has been purchased by F. P. Dean which will be remodeled and equipped by Dr. Richard H. Alexander, Dansville, as a private hospital.

Fire Destroys Medical Building.—The western half of the medical building, one of the oldest structures on the campus of the University of Michigan, Ann Arbor, was destroyed, August 12, by fire believed to have been of incendiary origin.

Personal.—Dr. Conrad George, Jr., Ann Arbor, was seriously burned in the face and eyes by splashing of sulphuric acid from the battery of his automobile.——Dr. Andrew T. Sherman, Detroit, has purchased the Anhut Apartments on Trumbull Avenue.

Antituberculosis Society Elects.—The Jackson County Association for the Study and Prevention of Tuberculosis at its regular meeting elected the following officers: president, E. J. Ryerson; vice-president, Dr. Peter Hyndman; secretary, Dr. Harry D. Obert (reelected), and treasurer, Fred Helmar (reelected). After the meeting a board of directors was elected, composed of the officers and enough additional members to make a total of fifty, including representative business men and women of Jackson. A tag or membership day is soon to be held to enlist funds for the erection of a modern sanatorium.

MINNESOTA

Fails to Pass Enabling Act.—Although the state legislature appropriated $500 to be used to defray the expenses of a board to be known as the State Tuberculosis Commission, it failed to pass the necessary enabling act, and as a result the governor has been advised by the attorney general that he has no power to create such a commission with authority to expend the money appropriated.

Personal.—Dr. John E. Corrigan has been appointed health officer and a member of the board of health of Spooner.——Dr. Edward J. Davis, Minneapolis, physician of the Minnesota Old Soldiers' Home, has resigned because of ill health.——Dr. Julian A. DuBois has been appointed physician to the State Home School for Girls, Sauk Centre.——Dr. William H. Hart, Duluth, superintendent of the St. Louis County Sanatorium, has resigned to take charge of the antituberculosis work in Saskatchewan.

Society Merger.—At the joint meeting of the Southern Minnesota and the Minnesota Valley Medical Associations held in Rochester, August 3 and 4, the merger of the societies was perfected and the following officers were elected: president, Dr. Louis A. Fritsche, New Ulm; vice-presidents, Drs. Hugh F. McGaughey, Winona, and John E. Crewe, Rochester; and secretary-treasurer, Dr. William T. Adams, Elgin. One of the features of the evening was the memoir of the late Dr. William W. Mayo, Rochester, presented by Dr. Charles Hill, Pine Island, a physician now in his eighty-fifth year, who forty years ago was associated with Dr. Mayo in St. Paul.

NEBRASKA

Personal.—Dr. Cyrus L. and Leta M. Pickett, formerly of Tecumseh, missionaries of the Christian Church at Laoag, P. I., who have been in the United States for several months, are about to return to the Philippine Islands, sailing from San Francisco, September 3.——Dr. J. H. Stough, Chadron, has recovered from his recent illness.

Typhoid Situation at Beatrice.—An epidemic of typhoid fever is reported to be raging at the Nebraska Institution for Feeble-Minded Youths, Beatrice, where there are twenty-eight cases, including the superintendent and six attendants, with two deaths thus far. Dr. William H. Thomas, Pickrell, the superintendent is reported to be critically ill.

New Hospitals.—The construction of the Omaha Surgical Hospital, which is to be erected for Dr. Albert P. Condon, has been commenced. The building will be 70 by 50 feet, two stories and one-half in height, and will have twenty-three private rooms in addition to two operating rooms, and the necessary sterilizing and etherizing rooms. The building is to cost about $50,000.——The former Holdredge home has been purchased for $50,000 by eight physicians of Omaha, and together with the house next to it will be remodeled as a hospital especially for nervous diseases. The institution will be able to accommodate about forty patients.

NEW JERSEY

Personal.—Dr. Duncan W. Blake, Jr., has been reelected medical inspector of the public schools of Gloucester.——Dr. William G. Schauffler, Lakewood, has been elected president of the new State Board of Education.

Typhoid Epidemic in Clayton.—Because of a serious outbreak of typhoid fever in Clayton, a thorough investigation is being made of every house, with special inspection of drains and sewer. The drinking water of the town is being tested. As soon as the reports come from the laboratory at Trenton, there will be a meeting of the Clayton board of health, the state board and the council of Clayton.

Reorganization of Medical Corps.—The Medical Department of the National Guard of New Jersey has now conformed to the army standard and will henceforth be known as the Medical Corps, N. G., N. J., and the officers will hereafter be designated as officers of the medical corps and will be assigned to the various organizations in the service. The reorganization has been under the direction of Lieut.-Col. Henry Allers, Harrison, assisted by Majors Paul M. Mecray, Camden, and James T. Wyckoff, Leonia. Requisition has been made for a fully equipped field hospital.

NEW YORK

Outing for Medical Staff.—The medical staff of the Syracuse Hospital for Women and Children was entertained by a dinner and outing by Dr. Hersey Goodwin Locke, Syracuse, president of the staff, at his home in Marcellus, July 26.

Cost of State Charities.—The fiscal supervisor of state charities shows in his annual report that the gross expenditures of the institutions reporting to him amount to $2,834,063. The cost of supervising fiscal affairs of institutions was less than 1¼ per cent.

Personal.—Dr. James V. May of Binghamton, has been appointed superintendent of Matteawan State Hospital for the Criminal Insane to succeed Dr. Robert B. Lamb, Fiskill-on-the-Hudson, who recently resigned.——Dr. Frank W. McMorrow, Syracuse, is spending the summer abroad.

Shows Gratitude by Gift.—Mrs. Cyrus H. McCormick, Chicago, has presented the Ithaca Hospital with a new *x*-ray machine at a cost of $500, in appreciation of the careful and prompt attention received at the hospital by her grand-niece, who was injured recently in an automobile accident.

G. A. R. Medical Bureau.—The formation of the Grand Army of the Republic Relief Bureau for the free use of all veterans of the Civil War in the State of New York is announced by Dr. Thomas W. Topham, Brooklyn, medical director of the Department of New York. The personnel of the bureau is as follows: Dr. Lewis S. Pilcher, Brooklyn, surgery; Dr. George Thomas Stevens, New York City, diseases of the eye; Dr. Wendell C. Phillips, diseases of the nose, ear and throat; Dr. Thomas W. Topham, Brooklyn, electrical therapeutics; Dr. J. Bentley Squier, New York City, genito-urinary diseases; Dr. Winfield Ayres, New York City, diseases of the bladder; Dr. Harold Barclay, New York City, diseases of digestion, and Dr. Alcinous B. Jamison, New York City, intestinal diseases.

New York City

Office Building for Physicians.—Plans have been filed for a seven-story building for physicians on West Seventy-Second Street to cost $65,000.

New Hospital.—A charter for a new Lutheran Hospital has been filed with the State Board of Charities and $200,000 has been pledged towards the enterprise.

Health Board to Move.—The city has leased the Abingdon Building, a new building not yet completed, at the corner of Center and Walker Streets, which will be occupied by the Department of Health. The annual rental will be $58,500 and the lease is for ten years.

Mediterranean Liners Held.—The steamers *Calabria* and the *Venezia* which arrived from the Mediterranean on August 11 are being held at quarantine. There was a death from cholera on board the *Venezia* on August 7, while the *Calabria* was held simply as a precautionary measure because she came from Naples.

Bequests to Charity.—The will of the late E. C. Whitney of New York gives $5,000 to endow a bed in the Orthopedic Hospital.——Mrs. Russell Sage has given $5,000 to the building fund of St. Joseph's Hospital at Far Rockaway, N. Y.——The will of the late Simon E. Bernheim leaves $2,500 to Mount Sinai Hospital, Home for Aged and Infirm, and the German Hospital.

Optometry Course at Columbia.—The department of extension teaching of Columbia University announces that it will give a two years' course for optometrists in answer to a special request from the Department of Education of the State of New York. The course is open to anyone who has completed a high school course but does not lead to a degree or a diploma; instead, a report of standing will be submitted to the Board of Regents.

Infant Mortality in New York and Brooklyn.—The Public Service League of Brooklyn has issued a statement based on the reports of the health department, showing that the infant mortality in that borough is greater than in Manhattan. The number of deaths for the last week in July for infants under five years of age was 304, against 284 in New York. At the offices of the health department in Brooklyn it was stated that this discrepancy was probably due to the numerous charitable organizations interested in the care of infants and young children in Manhattan.

Pasteurization Must Safeguard the Milk Supply.—The Commissioner of Health, Dr. Lederle, has made special efforts to ensure a pure milk supply for the city, but admits that it is impossible to exercise a sufficiently rigid inspection of the 44,000 farms in seven states that send 2,000,000 quarts of milk to this city daily. Beginning with January 1, practically all milk for general use must be pasteurized with the exception of the "certified" milk which is known to be produced under exceptional circumstances, and that used only for cooking purposes.

Personal.—Dr. John T. Fitzgerald, formerly medical superintendent of Public Charities in Brooklyn, has been made general superintendent of the Public Charities Commission Hospitals.——Drs. Henry B. Minton, Brooklyn, Dr. Hubbard W.

Mitchell and Dr. Henry W. Frauenthal have sailed for Europe. ——Dr. George G. Rambaud, physician of the Pasteur Institute, who was recently injured in an automobile accident and has been seriously ill in the Vassar Hospital, Poughkeepsie, is now said to be out of danger.——Dr. and Mrs. Ernest P. Livingston sail for Europe, August 12.——Dr. Hugh S. Reed, a physician in the employ of the Department of Health, was struck by a subway train at Fourteenth Street, July 28, and suffered a fracture of the skull.

Aid for Many Charities.—The will of the late John Curley of Brooklyn makes bequests to about fifty charities, among which are: the Sisters of the Poor of St. Francis, in charge of St. Peter's Hospital, $15,000; the Hospital of the Holy Family, $5,000; St. Mary's Hospital, $5,000; St. Catherine's Hospital Association, $10,000; Seney Hospital, Brooklyn Hospital, Brooklyn Bureau of Charities and Long Island College Hospital, each receives $1,000.——The will of Smith Ely, former mayor of New York, leaves about $1,000,000 to charities. Among the charities remembered are the Fresh Air Home for Crippled Children at Sea Breeze, Coney Island, $50,000; West Side Day Nursery of the City of New York, $10,000. After all debts and legacies have been paid, the Children's Aid Society and the New York Society for Improving the Condition of the Poor are to receive $100,000 each on condition that with the sum special endowments be instituted to be known forever as the Ambrose K. Ely Memorial.

OHIO

Personal.—Dr. James J. McClellan, Columbus, who has been seriously ill with septicemia, is reported to be improving.——Dr. Asa H. Syler, Sugar Creek, is ill with typhoid fever.

Secretary of State Board Resigns.——Dr. Charles O. Probst, Columbus, secretary of the Ohio State Board of Health for twenty-five years, has resigned, to take effect September 30.

Gift to Hospital.—Dr. David J. Merriman, Painesville, has donated his medical library together with the cases which contain it to the Painesville Hospital for the use of nurses in training and others who may desire to consult it.

Cincinnati

Personal.—Dr. John D. Miller has been appointed to succeed himself as a member of the board of health.——Dr. Rufus B. Hall is reported to be seriously ill in Cleveland.

PENNSYLVANIA

Personal.—Dr. Edgar Sturge, Scranton, was thrown from his carriage in a runaway accident, August 5, and sustained serious spinal injuries.——Dr. Percy C. Hoskins, West Chester, was operated on for appendicitis in the West Chester Hospital, August 1, and is reported to be doing well.

State Insane Hospital.—Bids were opened on August 8, by the Pennsylvania Commission to erect a state hospital for the criminal insane, for the construction of new buildings known as dining room building, kitchen, bakery, laundry, power building, icehouse, reservoir, system of sewage disposal, together with equipments pertaining to the State Hospital for the Criminal Insane, at Fairview.

Department Aids Country Doctor.—The department of health of Pennsylvania is doing great work for country practitioners. It not only furnishes laboratory facilities for the diagnosis of certain morbid conditions and the detection of obscure sources of disease, but has also put at command of physicians 350 stations at which diphtheria antitoxin may be obtained, and more recently, has established sixty-seven stations at which antitetanic serum may be furnished for indigent patients. The department also supplies physicians with instructions for families detailing the necessary precautions to be exercised by those in care of patients suffering from communicable diseases.

Pure Food Prosecutions Begun.—As a result of the violation of the pure food laws of the state, Dairy and Food Commissioner Foust ordered 215 prosecutions of which 138 are for the sale of milk having a lower quantity of butter fats than the law requires, fifty-three for the sale of cream below state standards and three for the sale of skimmed milk without notice that it was skimmed. These suits will be entered in Allegheny, Armstrong, Beaver, Blair, Butler, Cambria, Center, Chester, Clinton, Dauphin, Erie, Fayette, Huntingdon, Lancaster, Lebanon, Luzerne, Lycoming, McKean, Montgomery, Montour, Northumberland, Philadelphia, Venango, Warren, Washington, Westmoreland, Wyoming and York counties. Seven suits for the sale of ice cream not in accordance with state laws, five for the sale of adulterated non-alcoholic drinks and seven for the sale of adulterated candies, catsup and sausage were ordered in western counties and two suits for the sale of butter against state laws and one for the sale of bad eggs were ordered in Philadelphia.

Philadelphia

Hospital Buys New Quarters.—The American Oncologic Hospital has purchased the large stone residence at Thirty-Third and Powelton Avenue for $40,000, and will at once occupy the property.

Personal.—Dr. John K. Mitchell and Dr. Ernest LaPlace have sailed for Europe.——Dr. William C. Hollopeter has gone to Honolulu.——Dr. William E. Lee, chief visiting surgeon at the Pennsylvania Hospital, has been taken to that institution suffering with typhoid fever.——Dr. L. Webster Fox sailed for Europe, August 3.

Inspection of Public Baths.—Dr. Joseph S. Neff, director of Public Health and Charities, recently ordered a special investigation of swimming pools by a corps of medical inspectors, with the result that many of them, including some prominent club swimming pools were condemned as unsanitary. The investigations embraced twenty-nine swimming pools, of which twenty-two were municipal baths. Ten of these were declared to be in bad condition and improvements were ordered.

To Endow Room in Jewish Hospital.—At a meeting of the officers of the Jewish Hospital Association the offer of Mr. Isaac Wolf, Jr., who stated that he had made a provision in his will for the payment to the Jewish Hospital of $10,000 to endow a room in memory of his parents and to give a donation of $500 yearly during his lifetime, provided that the room were established at once. If for any reason the annual payments of $500 should not be regularly made or if the bequest of $10,000 was not paid under the will such endowment room should cease.

Tuberculosis Pier Successful.—The day camp for consumptives, established on the Bainbridge Street Pier, is now able to care for thirty patients daily. It is open from 9 a. m. to 6 p. m. Luncheons of milk, bread and butter are served at 10 a. m. and 4 p. m. and a good dinner at 12:30. A canvas pavilion, 30 by 40 feet, open on all sides protects the patients from sun, and there are curtains which can be lowered. The two dozen cure-all chairs were loaned by the Shut-In Society, while department stores and other firms have given the furniture needed. The pier is under the care of Dr. Albert P. Francine of the State Tuberculosis Dispensary assisted by a corps of physicians.

Bequest.—By the will of Meyer Seidenbach, $4,000 is devised to charity with the provision that in the event of the death of his widow and children and issue of the latter the trust funds established for their benefit also should go to charity. The will bequeaths to the Jewish Foster Home and Orphanage, $1,000; to the Jewish Hospital Association, $1,000; to the Federation of Jewish Charities of Philadelphia, $1,000; to the German Hospital, $500, and to a Jewish Synagog, $500.

SOUTH CAROLINA

Free Typhoid Serum.—The State Board of Health announces that in addition to the immunizing treatment of rabies, smallpox vaccine and antitoxin for diphtheria, it has decided to begin the free distribution of anti-typhoid serum.

TENNESSEE

College Building Sold.—The building on Broadway, Nashville, formerly occupied by the Medical Department of the University of Tennessee and for the last two years by the Tennessee Hospital has been sold on account of the removal of the medical department of the university to Memphis.

The Pellagra Board.—The board of inspectors of pellagra appointed by the State Board of Health has been completed by the appointment of Dr. Byrd S. Rhea, Bon Air, for the middle division. The three inspectors have taken a ten days' preparatory course in Nashville before entering on their duties. They are to lecture on pellagra in the various counties, and after the lectures, are to accompany physicians in visits to pellagra cases or pellagra suspects, giving personal instruction in each case as to diagnosis, isolation, etc.

VIRGINIA

Memorial Antituberculosis League.—The Latane Antituberculosis League, Winchester, organized as a memorial to the late Dr. Samuel P. Latane, has employed Miss Anne Carson, Riverton, to take charge of its work in Winchester.

Personal.—Dr. Washington B. Sager, Woodstock, has been appointed resident physician at the Alleghany Hospital, Davis, W. Va.——Dr. Robert F. Williams, Richmond, has been selected as dean of the medical school of the state university of Oklahoma, Norman.

Elections.—The Augusta County Medical Association, whose membership includes physicians of Augusta, Bath and Highland Counties, held its annual meeting at Staunton, August 2, and the following officers were elected: president, Dr. Harry F. White, Fishersville; vice-presidents, Drs. Walter S. Whitmore, Mount Sidney; Herman Welland, Middlebrook, and Kenneth Bradford, Staunton; secretary, Dr. Alexander J. Burkeholder, Mount Sidney; treasurer, Dr. Walter F. Hartman, Swoope; censor, Dr. Marshall P. Jones, Churchville; and trustee, Dr. R. Sumpter Griffith, Basic City.——At the annual meeting of the Piedmont Medical Society, held in Charlottesville, July 30, the following officers were elected: president, Dr. George W. Stark, Overton; vice-presidents, Drs. Ernest D. Davis, Standardsville, and Harry W. Porter, Louisa; secretary, Dr. Frank G. Scott, Orange; treasurer, Dr. John T. Walker, Barboursville.

WISCONSIN

Ill and Injured.—Dr. Guy A. Grafton, Hayward, sustained a fracture of the leg and other serious injuries in an automobile accident, August 3.——Dr. William P. Salbreiter, Racine, is reported to be seriously ill with pneumonia.——Dr. Frederick J. Hamlin, Beloit, has gone to South Dakota for a two months' vacation on account of ill health.

Personal.—Dr. Glenford L. Bellis, Antigo, has been appointed a member of the advisory board of the state tuberculosis sanatorium.——Dr. Jonas R. Longley, Fond du Lac, has been appointed local physician for the Soo line.——Dr. Lewis F. Bennett, after twenty-two years' practice in Beloit, has decided to locate in Spokane, Wash. At a farewell banquet given Dr. Bennett by the medical profession and the school board of Beloit, glowing tributes were paid to Dr. Bennett for his work in the civic uplift of the city.

GENERAL NEWS

Soo Line Surgeons to Meet.—The fifth annual meeting of the Minneapolis, St. Paul and Sault Ste. Marie Railway Surgical Association will be held in the Blackstone Hotel, Chicago, October 16 and 17, under the presidency of Dr. Albert E. Halstead, Chicago.

Military Surgeons' Meeting.—The annual convention of the Association of Military Surgeons of the United States will be held in Milwaukee, September 26 to 29. The headquarters will be at the Hotel Pfister and Dr. Gilbert E. Seaman is chairman of the committee on arrangements.

Antismokers Incorporate.—An organization called the Non-Smokers' Protective League of America, having its principal office in New York City, has recently filed papers of incorporation with the secretary of this state. The object of the league will be to enforce laws, ordinances and regulations restricting smoking. Among the directors are Dr. Harvey W. Wiley of Washington, Chancellor James R. Day of Syracuse University, Dr. Burt G. Wilder of Cornell University, President David Starr Jordan of Leland Stanford University, Dr. Winfield S. Hall of Northwestern University and other prominent educators.

Wall Charts on Hookworm Disease and Soil Pollution.—The United States Public Health and Marine-Hospital Service has just issued a series of nine wall charts illustrating the anatomy and life-history of hookworms, the methods of their dissemination, methods of prevention, and pictures of severely infected patients. These charts are intended for use in schools, colleges and field work. They are now being used by some of the state boards of health in the campaign for the eradication of hookworm disease. The charts are printed on heavy paper mounted on linen, with wooden hangers and are sold by the Superintendent of Documents, Government Printing Office, Washington, D. C., at $3.00 per set.

Municipal Congress.—The International Municipal Congress and Exposition is to be held at the Coliseum, Chicago, September 18 to 30, inclusive. The purpose of the congress is to discuss municipal problems. Many of the cities of the United States have already designated delegates and the most of these have included representatives from their departments of health. Discussions will be held before the general body by health officers on the "Milk Supply," and the "Advantage of a Low Death-Rate to a City." From September 28 to 30, inclusive, there will be a series of seven meetings participated in by health officers. These are for the purpose of adopting means of controlling such important activities of a city as "The Control of Contagion," "The Control of Milk and Water," "The Disposal of Sewage and Garbage," and methods of supervising those things in a city which easily become a nuisance. The plan is to have the subjects discussed in a very concrete way and then to have those in attendance go on record as in favor of certain methods of procedure, and against other methods. Many of the leading sanitarians of this country have agreed to act as leaders of discussions.

CANADA

Cocain Arrests.—The annual report of the chief of police of Montreal states that since July 1, 1910, there have been more than 150 arrests for either selling or using cocain in that city.

Council Meeting.—The Ontario Medical Council at its July meeting decided to cut out all examinations except the finals and to accept the examinations for the primary and scientific subjects of the provincial universities. The names of two physicians were struck from the register and two were readmitted, one of whom had had his license canceled sixteen years ago. Two representatives of defunct medical teaching boards who were on the staff of the medical department of the University of Toronto were refused status as members of the Council.

Personal.—Dr. Alfred Poole, house physician of the Vancouver (B. C.) General Hospital, has resigned.——Drs. H. H. Manseau, Montreal, Charles A. Hodgetts, Toronto, and Major Loren Drum, Quebec, chief sanitary officer of the Canadian Army Medical Service, have sailed for Europe.——Dr. Richard A. Reeve, Toronto, has been given an honorary degree by the University of Birmingham, England.——Dr. Harry B. Anderson, Toronto, has returned home after a several months' stay in Germany.——Dr. Andrew McPhail, Montreal, editor of the *Canadian Medical Association Journal*, who recently suffered severe injuries to the eyes, is reported to be improving.——Dr. Thomas G. Roddick, Montreal, has recovered from his recent illness.——Dr. Francis J. Shepherd, Montreal, has been reappointed dean of the medical faculty of McGill University.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, August 5, 1911.

The National Insurance Bill: Victory of the Profession

The unanimity of the profession in the face of what they regard as a great danger to their interests (described in previous letters to THE JOURNAL) has been crowned with almost complete victory in parliament, which is probably only the prelude to the complete attainment of all their demands. In the House of Commons, Sir P. Magnus, the member for London University, moved an amendment in accordance with the demand of the profession that persons with an income above $500 be excluded from obtaining medical attendance at contract rates. He pointed out that the profession was absolutely agreed on the point. Persons with incomes between $500 and $800 (the present limit of income above which the bill does not apply) should receive a money grant in lieu of medical attendance. The present system of contract attendance applied to 6,000,000 people and the bill as it stood would bring in 9,000,000 more. Experience had shown that while the contract system might be necessary in some cases it was not the best system for the cure of illness. Moreover, many doctors would be absolutely ruined by the bill as it stood and a great extension of the contract system would injure the status and character of medical practice. At present the doctor was able to combine contract with private practice, but if the contract system were to occupy his whole time the position would be intolerable. His whole time would be occupied and he would have neither leisure nor opportunity to keep abreast of the advances of science. Mr. Lloyd-George, the chancellor of the exchequer, pointed out that in many districts all medical arrangements had long been on contract terms, although in the skilled industries incomes above the proposed limit were earned. On the other hand, there were other industrial districts, such as rural ones, in which the incomes earned were below the proposed limit of $500, but the people were as well off, in consequence of lower cost of living, and the contract system did not prevail. Obviously the amendment would be of no advantage to the doctors practicing here who equally objected to the conversion of private

into contract practice. A far better method was to leave the question of wage limit to the local health committee. The amendment was negative without a division. Dr. Addison, lecturer on anatomy at St. Bartholomew's Hospital, then moved an amendment authorizing the local committee to require any person whose income exceeds a limit, to be fixed by them, and to allow any other persons, in lieu of receiving medical benefit, to make their own arrangements and to receive the sum which would otherwise have been expended in providing medical benefit. The amendment had a great advantage of introducing elasticity. It was carried by a large majority. It is thus open to the profession, if they maintain their unity, to insist in each locality on whatever limit of income they prefer. This amendment has the advantage over the rigid one of $500, which was proposed at first, that where circumstances require it a still lower limit can be fixed. The two other demands of the profession—that the administration of medical benefits shall be transferred from the friendly societies to the local health committees and allowing the free choice of doctor were also carried by large majorities. The British Medical Association have decided to place the whole bill before the profession again and to convene another representative meeting to consider it after it has passed through committee in the House of Commons. Many of the friendly society officials are very angry that the control of the doctors is taken out of their hands.

The Radium Institute

The Radium Institute, which was founded at the suggestion of the late King Edward two years ago by two well-known philanthropists, Sir Ernest Cassel and Viscount Iveagh, is now compleded. Paying patients will be treated only in association with and through the introduction of their physician. At the first visit they must either be accompanied by their medical adviser or bring with them his written statement of the case, giving details of the treatment already employed. Physicians are cordially invited to be present during the treatment and to assist in it when practicable. The following fees will be charged: for first consultation at the institute, $10; for treatment when the lesion is situated on the external surface of the body with apparatus containing not more than 50 mg. of radium, $10 per sitting; when containing more than 50 mg., $20; when the lesion is situated in a cavity, e. g., larynx, uterus, urethra, etc., $25 per sitting. Necessitous patients will be admitted to free treatment if certified by their physician to be fit subjects for charity. The diagnosis of the disease from which the patient is suffering must rest with the physician introducing him and should the medical superintendent not agree with the diagnosis he will discuss the matter with the physician. Should a third opinion be considered necessary one of the honorary consulting staff will be called in in the case of a free patient. In the case of a paying patient the physician will nominate the consultant, or if he prefers it, leave this to the medical superintendent. In no case will the medical superintendent acting on behalf of the institute accept a fee for taking part in any consultation. Physicians desiring information concerning the activity of specimens of radium salts can obtain it from the chemico-physical laboratory of the institute at the following rates: measuring the amount of radium contained in specimens of radium salts, or measuring the amount of radium contained in various applicators, $10; analysis of the rays emitted from various applicators: preparation of radium applicators, circular or square disks, $10; cylindrical and special designs, $25; examination of water minerals and the like for radio-activity, $10. The institute is a handsome building situated in the west of London near Portland Place, well designed and thoroughly equipped. On the ground floor are rooms for the reception of paying and free patients and for diagnosis. The first floor is fitted up for the treatment of patients; the second floor is devoted to scientific research, and the third floor for a workshop and tools which make the institute independent of outside help in the matter of apparatus. On the ground floor there are five consulting rooms—two for paying and two for free patients and one for gynecologic examination. The medical superintendent is Mr. A. E. Hayward Pinch, F. R. C. S., who has already achieved a considerable reputation in the administration of the polyclinic of which he was for several years medical superintendent. The executive committee is composed of Sir Frederick Treves, Sir Lauder Brunton, Sir William Ramsay (the eminent scientist), Sir Malcolm Morris. The honorary consulting staff consists of a number of specialists: Mr. W. H. Clayton-Greens, Dr. Herbert French, Mr. W. H. H. Jessop, Dr. J. H. Sequeira, Dr. W. H. H. Tate, Mr. Herbert Tilley and Mr. F. Holding.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, July 28, 1911.

Charles Nélaton

Dr. Charles Nélaton, surgeon of the hospitals and *agrégé* professor at the Faculté de médecine de Paris, has just died, aged 60, at his estate in Seine-et-Oise, of an embolism. Charles Nélaton followed in the footsteps of his father, the celebrated surgeon of Napoleon III. The younger Nélaton had a sort of predilection for diseases of the bones and joints. He was especially fond of surmounting the difficulties of autoplastic surgery and his procedures in rhinoplasty especially have been much noticed. He published works on tuberculosis in surgical affections on benign tumors of the bones and, in collaboration with Ombredanne, two monographs devoted respectively to autoplasty in general and to rhinoplasty.

The Appearance of Cholera in France

The minister of foreign affairs has ordered the French consuls to report without delay all cases of cholera which may appear in their respective localities, so that measures may be taken with regard to travelers and merchants coming from these places. Unfortunately there is reason to doubt that these measures will be efficacious. A correspondent of the *Semaine Médicale* has observed how these precautionary measures are applied to travelers coming from and returning to Italy through Modane. Only travelers coming direct from an infected locality are detained. Therefore a traveler coming from Naples, for example, might take a ticket for Rome, and if he stops a few hours or minutes in the station without going into the city even, he might take another train direct from Rome to Paris with a new ticket and would not be stopped on the way. It is therefore not surprising that this surveillance has not been efficacious in some one of the four frontier stations and that some travelers coming from infected localities or from regions not officially declared infected have been allowed to pass without detention. Thus several cases of cholera have appeared in different quarters of Marseilles. The situation appears more serious in the department of l'Hérault of which Montpellier is the capital, where there have been a series of cases of cholera and of deaths from cholera in various localities.

Permanent Marking of Professional Criminals

Dr. Séverin Icard of Marseilles proposes a means of marking indelibly professional criminals by injecting under the skin a certain quantity of cold paraffin so as to make a small nodule. This nodule, not appreciably altering the appearance of the skin, would remain unnoticed by the uninitiated, and in case it should be discovered by accident by a third party, it might pass for a small cyst or some kind of tumor, whose judicial origin would not be suspected. The points of the skin chosen for the injection would vary according to the nature of the crime or the offenses and according to the dangerous character of the criminal. Dr. L. Sadoul writes in the *Caducée:* "This is evidently an excellent police measure which without barbarism or pain, permits a return to the old brand placed on convicts; but who will make the injection? If it is some jailer, there is reason to fear that the syringe may not always be aseptic. If it is a physician the condemned will have the guarantees of safety but the physician will lower himself to the level of an executioner. There is no discussion possible. Even if the prisoner consents the physican would still be lowering his professional dignity."

A Fake Philanthropist

For some time there have been scattered broadcast circulars headed "Oeuvre philanthropique" and couched in the following terms: "In the name of humanity, for the sake of God and men, I announce gratuitously to all how I was cured of that terrible disease tuberculosis after having been abandoned and condemned by all physicians. Let the sick take courage. Thousands of others seriously ill like me have been radically cured. It is my priestly duty to spread in the world this extraordinary discovery for the sake of God and humanity. For all information write to M. l'abbé Juillies, 26, rue Chanoinesse. Enclose a stamp for reply. Thousands of cures and testimonials! Preserve this advice with care; it will save the existence of those who are dear to you." Many have followed this advice and have written. It must be inferred that they were not satisfied with the result of their correspondence and their credulity, for the courts have been led to take a hand in the affair. The investigation shows that it was not an abbé but merely a tradesman who had

taken this title the better to exploit public credulity and who was selling some kind of elixir at $1, $2 and $4 a bottle. The elixir promised to cure all kinds of diseases; tuberculosis, syphilis and baldness.

Syphilis in Prehistoric Times

The question whether syphilis existed in the old world before the fifteenth century or whether the companions of Christopher Columbus brought it from America, is not yet cleared up. In studying bones collected by the Baron de Baye in burial places on the Marne and preserved in the Museum of National Antiquities of Saint-Germainen-Laye near Paris, Dr. Paul Raymond, former *agrégé* professor at the Faculté de médecine de Montpellier, found a humerus and a cubitus belonging to different subjects which presented evident lesions of syphilis. Dr. Raymond concludes that syphilis, like tuberculosis, is as old as humanity and that America had no share in its propagation in Europe.

Personal

Dr. Antonin Imbert, major in the colonial sanitary corps, has died of the sequelæ of an anatomic puncture produced during a demonstration given in the amphitheater of the Ecole du service de santé des troupes coloniales.

The death of Dr. Charpy, professor in anatomy at the Faculté de médecine de Toulouse, is reported.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, July 29, 1911.

Personal

Professor Killian of Freiburg has accepted a call as the successor of Professor B. Fraenkel to the chair of laryngology at Berlin. In this way the question of which I have written has been happily solved. Our laryngologic clinic maintains its independence and receives for its head an investigator who is acknowledged as the foremost specialist in Germany. Moreover, we have at present no authority on laryngology in Berlin, so that the suffering public receives an essential advantage from this appointment.

Professor Fritsch of Bonn is to be succeeded by Professor Menge of Heidelberg.

Professor Wenckebach has accepted the call to Strasburg as director of the medical clinic.

Professor Bethe of Strasburg has at last accepted the call as professor of physiology at Kiel; his decision was delayed for many months on account of his illness as the result of an operation for hernia.

Professor Enderlen of Würzburg has been selected as the successor of Professor Payr of Königsburg.

Professor Kehrer of Bern, a son of the former gynecologist at Heidelberg, has assumed the direction of the gynecologic clinic at Dresden in place of Professor Leopold.

Jubilees

July 22, the semicentennial of the doctorate of Professor Waldeyer was celebrated at Berlin. The large participation of both natives and foreigners afforded another proof of the great esteem in which the 74-year-old scientist is held by his colleagues and the love and honor which is accorded to him by a large circle of the lay public. From many scientific bodies addresses and other marks of honor were presented. His pupils provided for a portrait bust and presented a memorial volume to which scientists of all lands have contributed. The Prussian government has awarded him the great gold medal for art and science.

July 24, Dr. Max Salomon also celebrated his golden doctor jubilee. He made himself noted, formerly, by several works in the field of medical history.

July 22, Professor Schmidt-Rimpper, the well-known ophthalmologist of Halle, celebrated his semicentennial as doctor.

July 25, the well-known pharmacologist, Professor Jaffe, of Königsburg, celebrated his 70th birthday. At the beginning of his career Jaffe was connected with the medical clinic at Königsberg as assistant of von Leyden. He published with Leyden an article on putrid sputum in which the discovery of the etiologic importance of spirilla and leptotriches for the lung process was announced. Of his pharmacologic works the chief are concerned with intermediary metabolism.

New Regulations for Hospital Construction

New provisions for the construction of hospitals, lying-in homes and infant homes were promulgated July 8, by the Prussian government, of which we will notice some of general interest. For hospitals it is required that the ground area of the building shall be at least 100 square meters (about 120 square yards) for each bed. The front wall of each hospital that is intended for the permanent accommodation of patients must be at least 20 meters (66 feet) distant from other buildings and the other walls 10. Before the windows of the patients' rooms such a free space must be provided that the enclosing walls and roofs of opposite buildings shall not extend beyond an air line drawn from the point of junction of the front wall of the building with the floor at an angle of 30 degrees with the extended floor line. Each story which is intended for more than thirty beds must have two staircases which reach the open air. Vestibules and passages must be at least 1.8 meters (6 feet) wide, well lighted and capable of being heated and ventilated. Rooms whose floors are not at least 30 cm. (12 inches) above the adjoining earth surface must not be used for patients. Sick-rooms which are lighted from only one side must not have their windows to the north. Stairs in institutions with more than twenty beds must be fireproof and in all stories, including the roof story, must be surrounded by strong walls. They shall be without windings and be furnished with landings of equal width and shall be at least 52 inches wide. The treads must be at least 30 cm. (12 inches) wide and the risers at most 17 cm. (6.8 inches) high. The staircases must receive light and air directly from outside. The windows in rooms with several beds must have a surface equal to at least one-seventh of the floor space and in single bedrooms must have a surface of at least 2 sq. m. (2 sq. yds.). Each room for more than one patient confined to bed must have an air space of at least 30 cu. m. (cubic yard) with 7.5 sq. m. (sq. yd.) of floor space per bed and in single bedded rooms there must be an air space of at least 40 cu. m. (cubic yards) with 10 sq. m. (sq. yd.) of floor space; for children under 14, a space of 20 c. m. and a floor space of 5 sq.m. will suffice. For patients that are not confined to bed in rooms with more than one bed, and air space of 24 cu. m. and for children under 14 an air space of 14 cu. m. are sufficient if a sufficient day room with at least 2 sq. m. of floor space is provided. More than thirty beds may not be placed in one room. In every hospital there must be erected for every ward or at least for every story a suitable day room with its chief windows not directed to the north for the recreation of patients who can temporarily leave their beds; this room must have at least 2 sq. m. (sq. yd.) floor space for each patient and must in any case measure as much 20 sq. m. (sq. yd.). Besides, a recreation yard with a garden having as a rule a space of 10 sq. m. for each bed, must be provided. The water-closets must be sufficiently extensive and at least one water-closet must be provided for every fifteen beds for men and for every ten beds for women, properly furnished and separated from the ward. Special water-closets, separate from those for the patients, must be provided for the nurses.

In lying-in hospitals and infant homes and similar establishments or wards for this purpose in general hospitals there must be provided for each woman with her child, in rooms occupied by several puerperal patients, space of at least 35 cu. m. and in rooms for one woman with her child at least 45 cu. m. In rooms for infants an air space of at least 12 cu. m. must be provided for each infant's bed. For sick infants at least 20 cu. m. of air space must be allowed.

Competition in Infants

In September Berlin will have a baby show under the supervision of the matron of a welfare station. Of those entered, 150 children of mothers, selected by lot, are to be admitted to the actual competition. A classification of the children is provided for into those whose parents prefer a vegetable, a meat, or a mixed diet, and also into the children of drinkers or abstainers. The distribution of prizes will be undertaken by all the women who offer to compete, with the exclusion of those whose children are selected for the narrower competition.

Industrial Instruction for Cripples

The East Prussian agricultural trade union has lately arranged for courses for the instruction of cripples open to the members of their guild. In this way a number of invalids who were hitherto entirely unfit for work will be rendered at least partly self-supporting and social insurance and public charity will be relieved of part of their burden.

State Assistance of Midwives

In many country districts of Prussia, especially in the East, numerous births occur without professional assistance on account of the lack of midwives, which results in a considerable increase in illness and death, both of mothers and children. This lack is principally due to the insufficient oppor-

tunities for earning a living in these districts. In order to meet the most stringent need the Prussian government has appropriated 100,000 marks ($25,000) for the support of district midwives for the poorer classes.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, July 28, 1911.

Organization of Midwives in Austria

The distribution and social position of midwives has long been unsatisfactory and has been the subject of much discussion in the public and in medical circles. Recently the "Union of Midwives" (Hebammen-Verband) of Austria sent a delegation to the minister of interior and to the minister of education, informing these authorities of the wishes and suggestions framed at the last meeting of the union. They desire a "numerusclausus" for their profession, on a scale of one midwife to 2,000 women of adult age, as well as fixed pay by the state in places where the quality of the population does not offer a likelihood of living for a midwife. This holds good chiefly for the country places and villages where at present there is no help for a parturient woman for miles around, because neither doctor nor midwife is within easy reach. Apart from that, the suggestions thrown out also provide for a tariff of fees for the women, as well as new regulations concerning the "curriculum." At present, one year of study at the gynecologic clinic is required. In future, two years should be spent in the midwives' school; the teaching to comprise the fundamental knowledge of anatomy and physiology of the pregnant and parturient female body, the necessary elements of bacteriology along with the surgical principles governing the process of childbirth. In order to enable the midwives to attain their aims, all women of the calling will be united in local and district branches to be called into existence soon, and it is intended to inquire also into the nature of diplomas and other qualifications possessed by the ladies at present.

The Heat in Austria

The most unusual weather conditions experienced in central Europe have had a very different effect in various places. Thus, in our country the sunshine during the first three weeks of July amounted to 260 hours, or fifty-five hours more than the average taken from the observations of 125 years. The rainfall was very small, only seven days instead of eighteen were classified as moist, with more than one hour's rain. At the same time, the temperature went up high, excessively high since the 19th, so that in Vienna the thermometer went up to 98 Farenheit in the shade! But in distinct opposition to the conditions prevailing during the heat wave in the United States, the humidity of the air was very low. Thus, perspiration was not interfered with, and we have had only a few cases of heatstroke up till now. The thirst of the population, however, is growing as the temperature is increasing. With us the iced drinks are not favored much, but from other reasons the daily use of ice has gone up from 100,000 bars—each weighing about 25 kilos—to 170,000 bars; at the same time the sale of milk, which generally diminishes in summer time to 600,000 liters, has gone up to 750,000 liters a day. The main reason for this is the extensive use of a favorite beverage, iced buttermilk, during the heat. As fruit is again very plentiful, this food has been used in enormous quantities, followed as usual by gastro-intestinal disturbances. Contrary to the expectations, the morbidity and mortality of infants and children has not been very high, at least up to the present. This is perhaps due to the dry heat which did not interfere with metabolism. It is a particular feature of our heat period this year that even the health resorts situated in the mountains did not escape its effects.

A Monopoly on Saccharin

The government has just presented to the parliament a bill which will make the manufacture of saccharin a monopoly of the state, like tobacco and salt. The monopoly shall comprise all artificial sweetening substances, except beet sugar or cane sugar. The sale of these articles will be licensed and the apothecaries will be the only persons who will obtain such a retail license. All articles of food containing saccharin will have to show it on the label and will thus be under special control. For persons who must not use sugar (diabetics) a special license may be granted and they will be able to obtain under it larger quantities of the substance at a reduced price, for their own use solely.

Marriages

ROBERT LEE PAYNE, JR., M.D., Norfolk, Va., to Miss Mary Elizabeth Harmon of the University of Virginia, August 2.

ALLEN C. BEETHAM, M.D., Baltimore, to Miss Bertha Hewlett, at Merrick Long Island, N. Y., July 6.

SURGEON LEWIS MORRIS, U. S. Navy, to Mrs. Ella Bingham Duffy of New York City, August 1.

LISLE W. NEISWENDER, M.D., Columbus, O., to Miss Mary Dennison, of Briggsdale, O., July 29.

GEORGE BALDWIN KROEGER, M.D., to Miss Bertha Fay, both of St. Louis, July 27.

LEE E. BRANSFORD, M.D., to Miss Blanche Royer, both of Baltimore, recently.

Deaths

Frank Pierce Foster, M.D., for more than thirty-one years editor of the *New York Medical Journal* and dean of the medical journalistic profession, died at Chadwick, N. J., August 13, from cancer of the throat, aged 69.

He was born in Concord, N. H., received his preliminary education in the public and high schools of that city, and graduated from the College of Physicians and Surgeons, New York City, in 1862. After a two years' internship in the New York hospital, he established himself in general practice in New York City where he has since resided, excepting for a short time when he served as surgeon on steamers running between New York and San Francisco, and in the fall of 1864 when for a few months he was contract surgeon in the United States Army. He engaged in general practice, but paid special attention at first to dermatology and later to obstetrics and gynecology. In 1870 he introduced the preparation and use of bovine vaccine virus into the United States under the auspices of the New York Dispensary and wrote a series of articles advocating the use of bovine as compared with humanized virus.

In January, 1880, he assumed the editorship of the *New York Medical Journal*, then a monthly published by the Appletons. Dr. Foster's energy and ability so improved the status of the journal that three years later it was made a weekly publication, and rapidly obtained its position as one of the leading medical weeklies of the United States. In the early eighties, Dr. Foster became editor and co-author of the illustrated "Encyclopedic Medical Dictionary" which bears his name and which occupied a large part of his attention for twelve years. He was also the editor of the "Reference Handbook of Practical Therapeutics" and a member of the editorial staff of the "Standard Dictionary."

Dr. Foster was a member of the American Medical Association and chairman of the Committee on Revision of Medical Nomenclature and prepared the reports presented by the committee at the sessions of 1909, 1910 and 1911. He was a member of the New York Academy of Medicine and the New York Gynecological Society, a member and once librarian of the Medical Journal Association, and secretary and president of the New York Dermatological Society.

Frank Wilfred Page, M.D. University of Vermont, Burlington, 1866; a member of the Boston Medical Library Association; from 1878 to 1880 assistant physician and superintendent of the McLane Hospital for the Insane, Somerville, Mass.; from 1897 to 1899 superintendent of the Vermont State Hospital, Waterbury; professor of nervous and mental diseases in the University of Vermont from 1898 to 1900; died at his home in Boston, August 2, aged 67.

Charles H. Brothers, M.D. University of Nashville, Tenn., 1872; a member of the Kentucky State Medical Association; formerly president of the Board of Health of Paducah; city health officer, and at various times president, secretary and treasurer of the Southwestern Kentucky Medical Association; died at his home in Paducah, August 3, from tuberculosis complicating nephritis, aged 61.

Charles Oliver Green, M.D. Bellevue Hospital Medical College, 1890; local surgeon at Hornell for the Erie Railway; captain and assistant surgeon, N. G., N. Y., assigned Third Infantry; a member of the staff of St. James (Mercy) Hospital; health officer of Hornell; was struck by an automobile while alighting from a street car, August 3, and died a few hours later from his injuries, aged 52.

Lawrence W. Hollis, M.D. University of Louisville (Ky.), 1883; formerly president of the Taylor County (Tex.) Medical Association; one of the board of examiners for the Thirty-Ninth Judicial District; proprietor of the Hollis Sanitarium. Abilene, Tex.; was struck by a falling timber during a wind storm in Abilene, July 31, and died soon after from his injuries, aged 49.

Thomas Crozier, M.D. Harvard Medical School, 1863; of Arlington, Mass.; a medical cadet during the Civil War; a member of the Massachusetts Medical Society; who was taken ill while at his summer home at Edgecomb, Boothbay Harbor, Me.; died in the Gregory Sanitarium at that place, July 25, from cerebral hemorrhage, aged 74.

John Baker Atchison, M.D. Long Island College Hospital, Brooklyn, 1867; a member of the American Medical Association; a Confederate veteran; a Montana pioneer and for the last twelve years a practitioner of Lewistown; died in St. Joseph's Hospital, Lewistown, August 2, from senile debility, aged 72.

John Beverly Warwick, M.D. Medical College of Ohio, Cincinnati, 1858; a veteran of the Civil War; for many years a member of the Hempstead Academy of Medicine, Portsmouth, Ohio; a member of the local pension examining board; died recently at his home in Lucasville, and was buried July 31, aged 77.

John Howard Crippen, M.D. Hahnemann Medical College, Philadelphia, 1872; a member of the American Medical Association, and Austin Flint-Cedar Valley Medical Society; attending physician at Presbyterian Hospital, Waterloo, Ia.; died at his home in that city, August 3, from nephritis, aged 60.

Arvid E. Osell, Medico-Chirurgical College of Kansas City, Mo., 1903; formerly assistant to the chair of clinical ophthalmology in the Medical Department of the University of Kansas; physician to the El Tigre Mining Company, near Douglas, Ariz.; died suddenly at his home, July 25, aged 43.

George John Schaller, M.D. Rush Medical College, 1881; a member of the American Medical Association; died at his home in Chicago, August 10, from the effects of a gunshot wound of the head, believed to have been self-inflicted with suicidal intent, while despondent, aged 51.

John Jacob Wuerth, M.D. College of Physicians and Surgeons, Chicago, 1898, of Chicago; a member of the American Medical Association; died at the home of his parents in Lawrence, Kan., August 3, from an accidental overdose of strychnin, aged 43.

William Richards, M.D. Long Island Hospital College, Brooklyn, 1862; University of Pennsylvania, Philadelphia, 1871; a member of the Massachusetts Medical Society; died at his home in Natick, July 27, from cerebral hemorrhage, aged 87.

James Marion Henry, M.D. College of Physicians and Surgeons, Baltimore, 1888; a member of the American Roentgen Ray Society; of Sioux City, Ia.; died at Hot Springs, S. Dak., July 26, from cancer due to *x*-ray burns, aged 51.

Lex Donald Wadley, M.D. College of Physicians and Surgeons, Little Rock, Ark., 1908; of Little Rock; a member of the American Medical Association; died in the Pulaski County Hospital, August 3, from uremia, aged 31.

Henry Albert Kirchner, M.D. Washington University, St. Louis, 1872; for twenty-five years physician to the German General Protestant Orphans' Home; died at his home in St. Louis, July 30, from nephritis, aged 61.

George Washington Fertich, M.D. Medical College of Indiana, Indianapolis, 1886; for twenty years local surgeon for the Panhandle System; died at his home in Dunkirk, Ind., August 3, from cerebral hemorrhage, aged 69.

Gregory Phelan, M.D. Cooper Medical College, San Francisco, 1880; for thirty years vice consul and deputy consul of the United States at Bordeaux, France, and Brussels, Belgium; died in the latter city, July 7.

Daniel Ayres Yarnell, M.D. Beaumont Hospital Medical College, St. Louis, 1889; died at his home in Eldon, Mo., July 29, from the effects of an accidental overdose of laudanum, aged 44.

Samuel P. Mitchell, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1875; died at his home in Mt. Etna, Ind., July 28, from the effects of an overdose of medicine, aged 64.

John W. Primm, M.D. Hahnemann Medical College, Chicago, 1878; for many years a practitioner of Woodstock, Ill.; died at his home in Pasadena, Cal., July 26, aged 60.

James Dunn, M.D. Tufts College Medical School, Boston, 1910; of Winthrop, Mass.; died at Boston City Hospital in December last from double pneumonia, aged 26.

William V. Anilosky, M.D. Medico-Chirurgical College of Philadelphia, 1907; died at his home in Lansford, Pa., July 29, from hemorrhage of the stomach, aged 27.

Milton A. Piper, M.D. Jefferson Medical College, 1871; a widely-known practitioner of Kensington, Philadelphia; died at his home in that place, July 26, aged 64.

William Cullen Bryant, M.D. New York Homeopathic Medical College, New York City, 1871; died at his home in Brooklyn, N. Y., July 22, from nephritis, aged 62.

Henley Boyd Newell, M.D. Rush Medical College, 1867; a member of the Racine County Medical Society; died at his home in Waterford, Wis., July 30, aged 66.

J. S. Gunn, M.D. University of Tennessee, Nashville, 1894; a member of the American Medical Association; died at his home in Adairville, Ky., August 1, aged 48.

George W. L. Hynds (license Tenn., 1889), a practitioner ever since the Civil War; died at his home in Hyndsver, Tenn., August 2, from heart disease, aged 74.

Edward L. Tracy, M.D. Chicago College of Medicine and Surgery, 1905; of Little Rock, Ark.; died at a sanitarium in Battle Creek, Mich., July 19, aged 37.

Jacob Bieger, M.D. Chicago Homeopathic Medical College, 1899; died at his home in Forest Park, Ill., August 6, from aortic aneurysm, aged 42.

James William Polhill, M.D. Medical College of Georgia, Augusta, 1908; died suddenly at his office in Hawkinsville, Ga., July 23, aged 37.

Louis P. Engleman, M.D. Louisville (Ky.) Medical College, 1897; was found dead in his office in La Fayette, Ind., August 7, aged 40.

Miscellany

Custody of Feeble-Minded.—Neither the prison nor the asylum is the right place for feeble-minded criminals, says G. A. Auden (*Jour. Crim. Law and Criminology*). There is no place for their custodial care in our present scheme of social polity, and we are driven to the strange conclusion that the best chance for the individual and for the society at large is, under existing circumstances, the commission of some serious crime, such as murder or arson, which will remove him for a lengthy period from further opportunities for antisocial action. By the removal from our penal establishments of the admittedly feeble-minded prisoners (on whom punishment and prison discipline are recognized as having no deterrent effect), the opportunities for greater specialization and classification of the same prisoners by the Borstal system, and by the recent regulations for the provision of humanizing influences, will be greatly increased. It is evident that an indeterminate sentence with statutory power to transfer to some form of institution which shall be substituted for the prison, affords the only satisfactory solution to the question.

Campaign Against Malaria.—A very effective campaign against malaria is reported by R. Ross in his book on "The Prevention of Malaria" as having taken place in Ismailia, a town founded by M. de Lesseps as headquarters of the Suez Canal Company. Since 1877, this town of 10,000 has been the scene of annual epidemics, the number of cases culminating in 1902, with more than 2,500, or 25 per cent. of the population! In 1902 a mosquito brigade was organized and the work directed chiefly toward the extermination of the mosquitoes, by draining a marsh near the town, filling up holes, visiting every house once a week and treating the cesspools with petroleum, in order to kill the mosquito larvæ, clearing all irrigation channels of reeds, so the water could flow swiftly, and by imposing penalties on the inhabitants if they did not cooperate in certain ways, the campaign was carried out to a magnificent success. While the number of cases annually during the years from 1885 to 1902 was seldom below 2,000, the years following the campaign showed the following reduction: 300 cases reported in 1903; 90 in 1904; 37 in 1905 and since then not one case has occurred! This campaign cost the town of Ismailia a trifle of $10,000 for the first year and $5,000 for the subsequent years. In the crusades against the diseases which swell the death-rate of the United States—diphtheria, scarlet fever and tuberculosis, to

mention only the principal groups—the social-economic character of these problems has repeatedly been pointed out, but it has very often been difficult to convince taxpayers that preventive medicine is a paying proposition in the end. The report referred to above makes the problems a matter of simple bookkeeping; in 1902 the community of Ismailia transferred from the assets to the expense account the sum of $10,000 (or $4 per case of malaria) and the next year this community cleared a profit of 2,200 human lives redeemed from the disease. Does this look like a "business proposition" to our American taxpayer? Of course, it all depends on our standards of valuation!

The Human Air Sterilizer.—Every additional person present in the operating room is one more purifying machine for its air; is yet another means of lessening the possibility of germs from the air falling on the open wound in serious numbers as to the maintenance of surgical asepsis. The inhaled air, with its myriad impurities, is steadily filtered, as it were, and deprived of them during its passage from the nostrils to the pulmonary air-cells. Within the nose are the moist and sticky hairs; within a portion of the larynx, all of the trachea, and the bronchi and bronchioles are the cilia, active in our defense, first catching our little enemies and then (the cilia) continually lashing upward, carrying them away from our lungs the region of danger. Of course, additional persons breathing means just so much more carbon dioxid present in that room, also various more or less poisoned animal effluvia excreted by the breath. Poisons of this kind do not, however, affect the wound adversely regarding its asepsis. Microbes alone do this, and it is a well-known fact that, however dusty may be the air inhaled, when exhaled it is found to be practically sterile. In a well-kept operating room just prior to operation the floor is mopped with some antiseptic solution. Otherwise, particularly in dusty seasons and in dirty towns, each pair of shuffling or applauding feet may cause more trouble than that person's respiratory sterilizing plant can quell.—Dawbarn in *Medical Record*.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

MAYR'S WONDERFUL STOMACH REMEDY

Another Fake Gall-Stone Remedy

The fake "gall-stone trick" and "tapeworm trick" have long been worked by itinerant medical swindlers. As every physician knows, the administration of large doses of some bland oil, such as olive oil, especially when followed by a saline cathartic, results in the passage of a number of greenish concretions from the bowels. The victim is made to believe that these concretions are gall-stones, and he feels that he is getting his money's worth in proportion to the number of these "stones" that are passed.

This method of defrauding the public is now being worked by "patent medicine" venders as well as by traveling fakers. In THE JOURNAL, Sept. 24, 1910, one of the most widely advertised of these fake gall-stone cures—"Fruitola"—was discussed. A number of inquiries have been received regarding the composition of another preparation of the same type, "Mayr's Wonderful Stomach Remedy," made by George H. Mayr, a Chicago druggist. One correspondent submitted a number of pseudogall-stones passed by one of his patients who had taken Mayr's nostrum. With the specimen the physician sent the following letter:

> "The accompanying specimen was brought to me by a patient whom I have been treating for membranous colitis. One of her symptoms is pain in the left side of the abdomen. There have been no attacks of biliary colic nor has the physical examination afforded any data on which to base such a diagnosis. On the advice of a friend the patient had taken 'Mayr's Wonderful Stomach Remedy,' which appears to be similar to 'Fruitola' recently exposed by you. I have found on a superficial examination that the masses which closely resemble gall-stones consist of a soap, part of which is insoluble. I would like to know whether the base of the insoluble portion of the soap consists largely of magnesia. If so, is it probable that this base is furnished by the saline cathartic given after the remedy or is a sufficient amount of earthy base excreted by the intestine to cause the formation of so large an amount of these pseudocalculi?"

To be able to answer this question intelligently, the Association's chemists analyzed not only the nostrum, but also the "gall-stones." The laboratory report follows:

LABORATORY REPORT

"Mayr's Wonderful Stomach Remedy" consists of a bottle of oil and two powders contained in a red carton on which appears the following:

"MAYR'S WONDERFUL STOMACH REMEDY for Stomach Troubles, Indigestion, Gases in the Stomach and Intestines, Dizziness and Fainting Spells, Colic Attacks, Torpid Liver, Constipation, Gastritis, Yellow Jaundice, Appendicitis, Gallstones, etc.

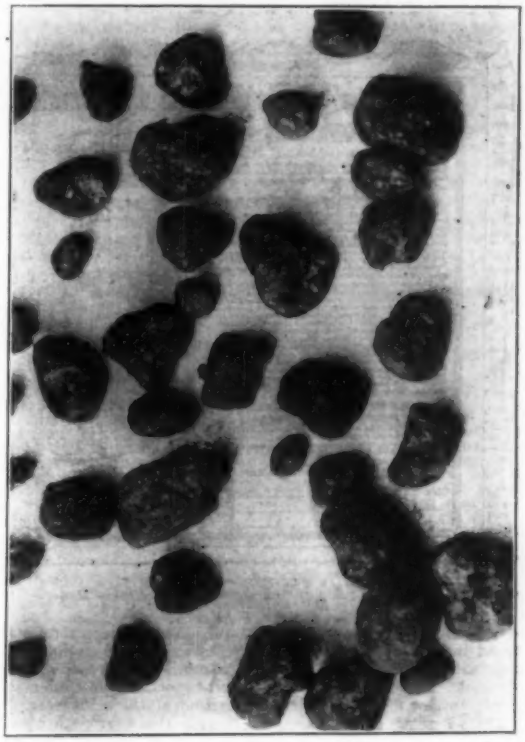

Fig. 1.—Photographic reproduction (actual size) of some of the supposed gall-stones passed by a victim who had taken Mayr's Wonderful Stomach Remedy. Anybody can perform the same trick by drinking a pint of olive oil and following it up with a seidlitz powder.

"The above ailments are mainly caused by the clogging of the intestinal tract with poisonous accretions—which are caused by a catarrhal condition of the gall-bladder and duct, liver, stomach and intestinal tract—backing up poisonous fluids into the stomach, and otherwise deranging the digestive system.

"This remedy painlessly removes these accretions without surgical operation, takes out inflammation from the entire intestinal tract and renders the same antiseptic."

A pamphlet comes with the bottle consisting chiefly of that sheet anchor of the patent medicine faker—testimonials. Of course, fraudulent claims are made.

"Price $1.00 per bottle; worth $100.00."
"A positive remedy for appendicitis."
"It is composed of nothing but strictly pure food vegetable ingredients."
"Unsurpassed for liver complaint."

"Those who believe that they have gallstones we implore you—*Don't submit to a dangerous surgical operation.* . . . The full course of Mayr's Wonderful Stomach Remedy not only painlessly removes this accretion, but allays the inflamed or catarrhal condition that causes them . . ."

The instructions for taking this nostrum directed the patient to take one powder at 3 o'clock in the afternoon; at bedtime the entire contents of the bottle (about a half-pint) was to be taken at one dose. The next morning the second powder was to be taken. The patient was told:

"When the bowels operate use a vessel and note the poisonous secretions removed by this remedy, in some cases dark green or yellow lumps varying in size from a fine bead to an olive—in severe cases even larger. In other cases quantities of thick tenacious slime or mucous [*sic*]. These accumulations are weakening and poisonous."

The bottle contained about six ounces of a bland yellow oil, which from the results of analysis[1] appeared to be olive oil. The powders, each of which weighed about one ounce, appeared to be ordinary Rochelle salts one disguised by the addition of about 6 per cent. compound licorice powder and the other by the addition of about 4 per cent. powdered licorice root.

From the composition of the nostrum, as determined by analysis, it was expected that the concretions, which the physician had submitted for examination would be found to consist of a sodium soap formed in the intestinal canal by the action

$1 Worth of Mayr's Wonderful Stomach Treatment FREE
MAYR'S WONDERFUL REMEDY
GEORGE H. MAYR, Mfg. Chemist,
40 Dearborn St., Chicago.

Fig. 2.—A reduced photographic reproduction of a typical advertisement of this fake gall-stone cure. From *Happy Hours*.

of the alkaline fluids on the fatty oil. As no magnesium was found in the preparation, the correspondent's suggestion that the "gall-stones" might be a magnesium soap did not appear plausible. Nevertheless it was thought worth while to demonstrate in a general way the composition of these masses.

The so-called gall-stones, weighing in the aggregate about 21 grams (315 grains) were grayish-green and of the size shown in the illustration (Fig. 1). When received they had the consistency of soft wax, but on standing in the laboratory for several days the material separated into a dark oily portion and an amorphous gray part. Analysis[1] demonstrated the presence of both free and combined fatty acids as well as of considerable sodium and some potassium. Lack of material made it impossible to determine whether the combined fatty acids existed in combination with sodium or potassium or in the original condition as oil; for the same reason, it was impossible to determine in what form the sodium and potassium were present. As the amount of sodium found was in itself more than sufficient to account for all the combined fatty acids, it is probable that the masses consisted essentially of free fatty acids and soap (sodium salt of fatty acids).

In short, the so-called gall-stones are principally a mixture of fatty acids and soaps produced by the action of the alkaline intestinal fluids on the large amount of oil taken.

1. The details of analysis will be published in the annual report of the chemical laboratory.

Correspondence

Purgation in Delirium Tremens

To the Editor:—After reading the article in the Therapeutics Department on "Delirium Tremens" in THE JOURNAL, August 5, I was struck by the omission of any reference to purgation. In the treatment of this condition, the incitement of an early and active purgation has seemed to me in the great majority of the cases the most important factor at our command. The thickly coated tongue, foul breath and unhealthy condition of the skin of many of these patients indicate that to the toxicity of the alcohol there is added the autotoxicity of faulty elimination. There is commonly a history of constipation and at times of inactive kidneys. An initial dose of from 3 to 5 grains of calomel followed in six hours by a saline has seemed to me so satisfactory that it has become my routine practice and is rarely contra-indicated. In severer cases I give from 3 to 5 compound cathartic pills and a cleansing enema on admission to the hospital and follow this with a saline. There are cases in which I employ immediate full doses of Epsom salts or even small doses of croton oil after 1/6 gr. of morphin hypodermically to obviate vomiting. Such measures, I believe, render the frequently required hypnotics less dangerous and more effectual. Such thorough elimination seems to cut short the course and severity of any delirium present and often to prevent the occurrence of a delirium which appears imminent. Further, the use of these hydragogues relieves congestions of cerebrum and other organs and may thereby avoid the incidence of an always dangerous edema of meninges or lungs. I believe the above an important addition to the very helpful measures outlined in THE JOURNAL for the treatment of delirium tremens.

C. C. WHOLEY, Pittsburg.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SERIAL DILUTION OF KOCH'S TUBERCULIN FOR THERAPEUTIC USE

To the Editor:—Please publish the method of serial dilution of Koch's new tuberculin for therapeutic administration; also, some references in the literature. J. J. ZAUN, St. Paul, Minn.

ANSWER.—The dilution should be made with normal salt solution plus 20 per cent. of glycerin.

The original solution constitutes solution No. 0. If 0.1 c.c. of this solution be mixed with 0.9 c.c. of the diluent we get solution No. I; 0.1 c.c. of solution No. I mixed with 0.9 c.c. of diluent gives solution No. II; 0.1 c.c. of solution No. II mixed with 0.9 c.c. of the diluent gives solution No. III. The dose to be administered at first should be so small as not to produce a reaction. It should be gradually increased by using fractions of a cubic centimeter of the solution until 1 c.c. is given at a dose. The transition is then made to the next stronger solution, 0.1 c.c. of which is equivalent to 1 c.c. of the weaker. The increase of dose by advancing by 0.1 c.c. of this stronger solution is usually too abrupt. This is avoided by giving 0.5 c.c. of the weaker solution with 0.1 of the stronger, the dose thus given amounting to 0.15 c.c. of the stronger solution. The doses are thus gradually increased until 1 c.c. of solution No. II is used when the transition is made to No. 1 and finally to No. 0 in the manner described. It is not advisable to make up more than 1 c.c. of tuberculin solution at one time.

The literature of tuberculin therapy is so extensive that it is not practicable to publish references to it.

SODIUM CHLORID IN EPILEPSY, GASTRIC ULCER, ETC.

To the Editor:—Please give me references to articles on the following topics:

1. The effect of the ingestion of sodium chlorid in epileptics.
2. The effect of the ingestion of sodium chlorid in hyperchlorhydria and ulcer of the stomach.
3. The effect of the ingestion of sodium chlorid in dropsy of renal or cardiac origin.
4. The effect of the ingestion of sodium chlorid as causing chronic interstitial nephritis, and incidentally arteriosclerosis, by increasing blood-pressure and inhibiting osmosis through the renal capillaries.

T. I. O'DRAIN, Philadelphia.

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Jackson, H. C., and Elting, A. W.: Salt Elimination in the Urine of an Individual with General Edema of Obscure Origin, Followed by Cure, *Arch. Int. Med.*, October, 1908.

Mendel, F.: Salt-Poor Diet as a Systematic Method of Treatment, *München. med. Wchnschr.*, March 9, 1909; abstr. in THE JOURNAL, April 17, 1909, p. 1301.

Fleischer, M. S., and Loeb, L.: Influence of Addition of Adrenalin to Solutions of Sodium Chlorid and Calcium Chlorid on Production of Urine, Ascites and Intestinal Fluid, *Jour. Exper. Med.*, May, 1909; abstr. in THE JOURNAL, June 12, 1909, p. 1956.

Fleischer, M. S., and Loeb, L.: Influence of Myocarditic Lesions on Production of Ascites, Intestinal Fluid and Urine in Animals Infused with Solutions of Sodium Chlorid and Calcium Chlorid, *Jour. Exper. Med.*, May, 1909; abstr. in THE JOURNAL, June 12, 1909, p. 1956.

Jaeger, O.: Restriction of Salt in Urinary Disturbances During Pregnancy, *Deutsch. med. Wchnschr.*, Oct. 14, 1909; abstr. in THE JOURNAL, Nov. 20, 1909, p. 1784.

Manshardt, C.: Elimination of Salt in Nephritis and Edema of Renal Origin, *Arch. f. Kinderh.*, lii, Nos. 1-3; abstr. in THE JOURNAL, Jan. 22, 1910, p. 327.

Alwens, W.: Salt-Poor Diet in Treatment of Tuberculous Ascites, *Therap. d. Gegenw.*, March, 1910; abstr. in THE JOURNAL, April 9, 1910, p. 1243.

Strauss, H.: Importance of Salt for Metabolism, *Berl. klin. Wchnschr.*, Dec. 12, 1910.

Leva, J.: The Salt-Poor Diet, *Med. Klinik*, May 15, 1910, p. 93; abstr. in THE JOURNAL, July 2, 1910, p. 93.

4. We have no articles whose titles indicate that they treat of this subject.

EPIDEMIC PNEUMONIA—A QUERY FROM INDIA

To the Editor:—As a regular reader and admirer of THE JOURNAL, I am particularly struck with the wealth of references which you and your contributors always muster. I shall therefore be most grateful if you will answer, or cause to be answered, the query below; up to date my search for literature bearing on the subject has been most disappointing. Please give me references to literature on epidemic pneumonia, especially as regards its etiology.

C. B., Meerut, U. P., N. India.

ANSWER.—Pneumonia occurs in epidemic form under various circumstances. The following factors may be noted as contributing to its epidemic character: 1. Unusual virulence of the pneumococcus. 2. Occurrence in connection with another disease of epidemic character, such as influenza, plague, etc. 3. Marked opportunities for conveyance, as in institutions like jails, asylums, etc. 4. Circumstances that lower resistance of a number of people. It is impossible from this distance to say what are the special circumstances which make possible the epidemic of which our correspondent writes, but it is to be hoped that a thorough investigation will be made resulting in a valuable contribution to medical science.

The following references to literature on epidemic pneumonia may be consulted:

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Southgate, L.: Prevalence and Mortality of Epidemic Pneumonia, *Virginia Med. Semi-Month.*, June 10, 1904.

Fink, G. H.: Epidemic of Infectious Pneumonia, Plague, and Influenza in India, *Jour. Trop. Med.*, Oct. 16, 1905.

De Blasi, A.: Epidemic Pneumonia, *Gazz. d. osp.*, xxvii, No. 36; abstr. in THE JOURNAL, Aug. 25, 1906, p. 644.

Woldert, A.: Epidemic of Grippe Followed by Pneumonia, *Med. Rec.*, Jan. 5, 1907; abstr. in THE JOURNAL, Jan. 19, 1907, p. 261.

Recchi, G.: Epidemic Pneumonia, *Gazz. d. osp.*, xxviii, Nos. 12-18; abstr. in THE JOURNAL, July 6, 1907, p. 95.

Fabyan, M.: Epidemic Pneumonia, *Bull. Johns Hopkins Hosp.*, November, 1907; abstr. in THE JOURNAL, Dec. 21, 1907, p. 2121.

Oreste, T.: Epidemic Pneumonia, *Gazz. d. osp.*, Oct. 11, 1908.

Shuter, R. E.: Epidemic Pneumonia, *Australas. Med. Gaz.*, March, 1909.

Mann, S.: Epidemic Pneumonia, *Virginia Med. Semi-Month.*, Aug. 13, 1909; abstr. in THE JOURNAL, Sept. 4, 1909, p. 815.

Powell, A. J.: Pneumonia, *Dublin Jour. Med. Sc.*, March, 1911; abstr. in THE JOURNAL, April 1, 1911, p. 1008.

Rondet, H.: Analogies between Epidemic Pneumonia in Institutions and Pneumonic Plague, *Lyon Med.*, April 9, 1911; abstr. in THE JOURNAL, June 24, 1911, p. 1908.

STRONGYLOIDES STERCORALIS

To the Editor:—Please outline for me a satisfactory treatment for an enteritis resulting from an infection from *Strongyloides stercoralis*. Thymol has been tried in various methods for a considerable length of time without appreciable results.

F. H. STIBBENS, U. S. Navy, San Francisco.

ANSWER.—The results obtained in the treatment of infection by *Strongyloides stercoralis* have been unsatisfactory for the reason that the parasites burrow into the mucous membrane of the intestines and thus render it difficult for a drug to reach them. Thymol has been much used, but, while it seems to be as efficient as any drug, it is often of little or no value. In case of failure with thymol, aspidium (male fern) might be used. The administration of glycerin has been recommended by Preti, the patient receiving 50 gm. (1½ oz.) of pure glycerin by the mouth and 30 gm. (1 oz.) by the rectum, two hours later. After two days, the procedure is repeated.

STRANGULATED HERNIA WITHOUT VOMITING

To the Editor:—In THE JOURNAL, June 24, 1911, page 1882, Dr. Judd reports a case of strangulated hernia without vomiting. I note, however, that his patient was a Chinaman. During my service in China I operated on a man in Peking for a left inguinal strangulated hernia; the tumor was about the size of a quart jar and had been strangulated between twenty-four and thirty hours. This man had not vomited at any time nor had his bowels moved since the strangulation. Operation and recovery were uncomplicated. I saw about two such cases among the Chinese, but have never seen one case in an American in which vomiting did not occur.

This recalls a case I had in Peking. A man, aged 30, came to the hospital for relief. The one thing he needed was to have his stomach unloaded. I gave him 20 grains of zinc sulphate. He lighted his pipe and began to smoke. There were no results. I then gave him, hypodermically, 1/10 grain of apomorphin. He continued to smoke. I tried several vaunted emetics on him. He retained them with complacency. Finally, I washed out his stomach. It needed it badly.

JOHN INGLIS, Denver.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Aug. 5, 1911.

Baily, Howard H., captain, detailed for service assigned Major C. R. Reynolds, Medical Corps, as inspector and inspector Ambulance Company, D. C. Militia, Frederick, Md., Aug. 18-27, 1911.

Boehs, Charles J., M.R.C., ordered to Fort Porter, N. Y., for temporary duty.

Fisher, Henry C., lieut.-col., left Columbus Barracks, Ohio, en route with recruits to Fort McDowell, Cal.

The following-named officers will proceed at the proper time to the camp of organized militia for duty as inspector instructors of militia and on completion of this duty will return to proper stations.

Wilcox, Charles, lieut.-col., is ordered to Springfield, Ill., August 12 to September 2.

Fuller, Leigh A., major, is ordered to Nevada, Missouri, August 20-27, to Ottumwa, Iowa, August 28 to September 6.

Skinner, George A., major, is ordered to camp near Morristown, Colo., September 12-16.

Van Pool, Gideon McD., major, is ordered to Dixon, Ill., August 12-26.

Van Dusen, James W., major, is ordered to Fort Riley, Kansas, August 7-16.

Grissinger, Jay W., captain, is ordered to Des Moines, Iowa, July 20-29, to Vinton, Iowa, August 7-16, and to Shenandoah, Iowa, August 21-30.

Blanchard, Robert M., captain, is ordered to Sparta, Wis., September 1-30.

Jones, Percy L., captain, is ordered to Wheatland, Wyo., August 13-21.

Owen, Leartus J., captain, is ordered to Elgin, Ill., July 29 to August 26.

Williamson, Llewellyn P., first lieut., is ordered to Jimmie Gulch, Colorado, September 19-23.

Clarke, Howard, first lieut., is ordered to camp near Omaha, Neb., September 27 to October 6.

Buck, Carroll D., major, is granted leave of absence for one month to take effect about August 15.

Norman, Seaton, first lieut., is granted leave of absence for one month and twenty days, to take effect on his relief from duty Fort Leavenworth, Kan.

Halliday, Charles H., M.R.C., is granted leave of absence for two months.

Williamson, Llewellyn P., first lieut., is ordered to Camp Perry, Ohio, to report to executive officer of National Matches for special duty August 12-30, and on completion to return to proper station.

Poust, Luther R., M.R.C., is assigned to permanent duty at Fort Du Pont, Del.

Chilton, Frank N., lieut., left San Antonio, Texas, with Third Field Artillery, en route to Fort Myer, Va.

Darnall, Carl R., major, left Washington, D. C., on one month and ten days' leave.

Dickinson, C. F., M.R.C., left Fort Duchesne, Utah, with troops on practice march.

Walkup, Joseph O., lieut., left San Antonio, Texas, en route to Army General Hospital, Fort Bayard, N. Mex.

Lake, George B., lieut., reported for duty at Fort Sheridan, Ill.

Etter, Harry B., lieut., reported at Camp Fort Bliss, Texas, from duty in field Novin, N. Mex.

Van Kirk, Harry H., M.R.C., is ordered to report to the president of the Army Medical School for duty as a student.

Moncriel, William H., captain, ordered to proceed from Fort Leavenworth to Fort Sheridan, Ill., for duty with troops from latter post at encampment at Port Huron, Mich.

Flynn, Thomas J., lieut., ordered to proceed from Fort Snelling to Fort Brady, Mich., for duty with troops from latter post at Camp Perry, Ohio.

Ingalls, Raymond E., dental surgeon, now at Fort Apache, Arizona, will proceed to Whipple Barracks, Arizona, for temporary duty.

Miller, Edgar W., captain, is granted fourteen days' leave of absence.

Leary, Thomas J., first lieut., is granted leave of absence for three months on his arrival in the United States.

Smith, Allen M., lieut.-col., is relieved from duty at Fort Sam Houston, Texas, when no longer needed at Base Hospital, and will proceed to Fort Snelling, Minn., for duty.

Ragan, Charles A., major, promoted to, with rank from July 14, 1911.

Medical Corps, U. S. Navy

Changes for the week ended Aug. 5, 1911.

Nash, F. S., medical inspector, orders of July 27 revoked.

Bishop, L. W., surgeon, commissioned surgeon from Aug. 24, 1910.

Strine, H. F., surgeon, commissioned surgeon from June 2, 1911.

Elliott, M. S., surgeon, detached from the Naval Medical School, Washington, D. C., and ordered to duty in connection with the *Utah* and to duty on board that vessel when placed in commission.

Huff, E. P., P. A. surgeon, commissioned P. A. surgeon from July 12, 1910.

Schmidt, L. M., P. A. surgeon, commissioned P. A. surgeon from December 28, 1910.

McDowell, R. W., P. A. surgeon, commissioned P. A. surgeon from May 18, 1911.

Whiteside, L. C., and Thomas, G. C., P. A. surgeons, commissioned P. A. surgeons from June 15, 1911.

Brown, E. W., asst.-surg., ordered to duty at Quincy, Mass., in connection with submarines.

Traynor, J. P., surgeon, commissioned surgeon from July 11, 1911.

Gill, J. E., P. A. surgeon, detached from the navy recruiting station, Cleveland, Ohio, and ordered to the *Wabash*.

Parham, J. C., asst.-surg., commissioned asst.-surg. from July 7, 1911.

Shepard, G. W., asst.-surg., ordered to the navy recruiting station, Cleveland, Ohio.

Nohle, H. D., asst.-surg., detached from the *Villalobos* and ordered home to wait orders.

Ledbetter, R. E., surgeon, detached from the bureau of medicine and surgery and ordered to the naval hospital, Washington, D. C.

Dunn, H. A., surgeon, detached from the naval hospital, Washington, D. C., and ordered to duty in connection with fitting out the *Florida* and to duty on board when commissioned.

Rhodes, G. C., P. A. surgeon, detached from the naval hospital, Port Royal, S. C., and ordered to the *South Carolina*.

Bunker, C. W. O., P. A. surgeon, detached from the naval hospital, Mare Island, Cal., and ordered to the navy recruiting station, Los Angeles, Cal.

Hoyt, R. E., P. A. surgeon, detached from the naval hospital, Mare Island, Cal., and ordered to the navy yard, Mare Island, Cal.

Jones, E. L., P. A. surgeon, detached from the navy recruiting station, Dallas, Texas, and ordered to duty on the Asiatic station.

Brown, H. L., P. A. surgeon, detached from the navy recruiting station, Los Angeles, Cal., and granted leave for one month.

Bacon, S., asst.-surg., detached from the *Wheeling* and ordered to command of the naval hospital, Port Royal, S. C.

Riddick, W. J., asst.-surg., detached from *South Carolina* and ordered to the *Wheeling*.

Boland, M., asst.-surg., detached from the naval hospital, Philadelphia, Pa., and ordered to the navy recruiting station, Dallas, Texas.

Sanborn, C. F., acting asst.-surg., ordered to the marine recruiting station, Denver, Colo.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS.

THE EVILS OF THE CONTRACT-SYSTEM

Report of the Committee Appointed by the Erie County Medical Society to Investigate Unethical Contract-Practice

(Presented at Regular Meeting, held at Buffalo, N. Y., June 19, 1911)

The committee appointed to investigate contract-work wishes to report the result of its investigation up to date, and the remedy which it deemed proper that this society should adopt in order to eradicate this evil. We found it to be so widespread as to necessitate careful and close analysis, making it impossible for the committee to hand in a complete report at this meeting. From the data which came under our observation, we estimate conservatively that at least 150,000 people in this city alone are securing professional services under unethical contracts. I say that our work is incomplete, made so by the magnitude of the evil and the length of time at our disposal in which to cover it. But in justice to this society, we cannot offer any report without giving a specimen of the despicable, penny-contracts held by many of the physicians of Buffalo. The following section relative to the duties of the physician, taken from the by-laws of an organization known as the Fraternal Order of Eagles, is self-explanatory.

SECTION 1. It shall be the duty of the Aerie physician to attend, prescribe for, and perform such surgical work as may be necessary, on all members of the aerie in good standing and their respective families, also all visiting members and their families without extra charge, except in cases of confinement and primary venereal or chronic diseases, or disabilities existing at the time the member made application for membership.

There are two other organizations which offer contracts similar to the above that came under our notice. These organizations are known as the Loyal Order of Moose and the Fraternal Order of Orioles. All these organizations exist throughout the country. We found that there are a number of other fraternal insurance organizations which offer contracts of a like nature operating in this city. Among these are the American Order of Foresters, the Order of Red Men, the Maccabees and various other societies with peculiar appellations. We found that certain liability insurance companies have physicians under contract to care for their policy-holders in case of injury. These physicians are paid a miserable pittance, primarily, to cooperate with the insurance companies against the poor unfortunate who unknowingly gets into the web which the greedy, cunning, and malicious spider has so craftily and slyly woven around him. This insectivorous professional cooperates with the liability insurance company at the expense of his innocent and trusting patient to prevent liability. This, in my opinion, is an offense which should be punishable by law.

We found that a number of the large corporations of this city have fostered a movement of their employees to form associations which are supported by regular weekly assessments, primarily for their own benefit, and secondarily for the benefit of their employees. The employee is the actual supporter of this association while the employer receives the greater part of the benefit. By this arrangement the employer undergoes no inconvenience. The association supports itself. It hires a physician not only to care for its members when injured while at work, but also arranges to have the physician care for any of them for any physical disturbance which may arise during the time of the contract. In some cases they have hired the physician at a regular monthly salary to care not only for themselves, but for their families as well. They have had no difficulty in securing the services of a physician to engage in this admirable, lofty, and sublime work. Of course, the corporation sees to it that one friendly to its interests secures the position. It is absolutely necessary for the corporation to secure the services of an "honorable man"

to perform the duties of this high office. He must work for the interest of the corporation and against the interests of the employees. Whenever there is an injury to any of the employees, the actual supporters of the physician, he must have the welfare of the corporation at heart, and do his best to prevent litigation. What a fine clock-wheel arrangement this is!—the corporation works its employees, the employees work the doctor, the doctor works the corporation, and they all work one another.

We found that practically the entire Italian male population of Buffalo is entitled to medical services under cheap contract, and that the doctors holding these contracts, in some cases, are caring for the families at cut rates, and a few are giving medicine free of charge. This system has grown from bad to worse. As the field of competition increases, the younger graduates are taking up the work more cheaply than their predecessors. What is the result of this mad competition? The physician has thrown o.. the dignity of his profession and has stooped to the acceptance of a mere pittance as compensation for his professional services. Of course, the number of patients he must call on is great, and he cannot, therefore, render to each individual the medical attention required, for he must "be up and doing," as he must utilize every minute to the best of his personal advantage. Under such a system there is no incentive to do good work. The people do not realize their danger, and something must be done to educate them to the fact that, far from gaining any salutary advantage, they are committing the greatest folly. The doctors of Italian origin who are holding these contracts realize their mistake, and have given the committee to understand that they would be only too willing to give up their contracts were it not that they fear that some of the American doctors would only too readily take up the work which they should abandon. Such is their plight, and, if these men sacrifice their penurious positions, this society must do all in its power to prevent the niggard and avaricious medicaster from taking their place. Among the Polish population the same system is in vogue, but we are not prepared to state the extent of it in this report.

Another phase of this work was brought to our attention. We learned that a large number of the department stores and other business places have associations which contract with the physician in the same manner. Indeed, this system has become so wide-spread that even a number of the labor organizations have adopted it as "a good thing."

A certain institution which advertises itself as a hospital, engages in wholesale contracts for an infinitesimal amount, to care for its policy-holders, who may be individuals or families, for any illness of any nature whatsoever. This institution has a dispensary where colored solutions under alphabetical labels are dispensed by an undergraduate. We have learned of still another method of securing "the almighty dollar." We learned that a certain Dr. Richardson, whoever he may be, with some twenty others, have prepared a very grandiose and elaborate work which they are handing out at the rate of $10 per copy, and charging $2 extra which entitles the holders of the certificate to free consultation for a period of two years. There is a cooperative plan of procedure between the local representative agent of this erudite organization and a certain leading drug-store which enables them to complete the chain of their depredations most thoroughly. While this very idea smacks of the rankest quackery, yet it is no worse than some of the other cheap contracts held by supposedly regular men. The only difference between them is that one is direct while the other is an indirect mode of procedure.

Another form of contract considered by your committee is one which will tax our efforts to obtain evidence. It was said that some physicians are in the habit of contracting with their patients prior to their illnesses for sums varying from ten to one hundred dollars annually. If such practice is in vogue, it must be most heartily condemned. This gambling game deserves the severest criticism. The physician who practices it is unscrupulous and mercenary. It is an imposition upon society, and, like all other unethical contracts, must be stigmatized with the utmost opprobrium.

We found that each railroad entering Buffalo has its surgeon under annual contract to care for its employees, or any one except a trespasser who may happen to be injured. We do not know the salary paid to these surgeons, but we understand that it is comparatively small for the services required. The action of the committee in attacking the contract-system must not be misunderstood. We do not care whether the physician is overpaid or underpaid. We are attacking it because the principle underlying it all is unethical, unjust, and, in every case, injurious to the profession in general. The surgeon who holds a railroad contract holds it with the proviso that he cooperate with the railroad and work against the interests of the poor unfortunate who happens to come under his charge. This is, of course, a good thing for the railroad, a nice thing for the surgeon, since it nets him a yearly salary, but a very bad thing for the public. We found that, undoubtedly, this particular form of contract is the grandparent of the rest. In justice to our sense of fairness, we could not possibly take any action against the small offenders without attacking these polished violators of the ethical laws who are seemingly responsible for all the others.

We believe that the above covers concisely the whole of the contract-system. The causes of these existing evils were offered by the committee, and are as follows:

1. Lack of knowledge of the ethics of medicine.
2. Professional jealousy.
3. Indifference of the older practitioners.
4. The example set by some of the older practitioners.
5. Overcrowding of the profession.
6. The tolerance of this state of affairs by all medical societies.
7. The commercialism of the age. The professional struggle not only for the almighty dollar but also for the mite(y) cent.
8. The chief cause of all, however, we found to be the complete disorganization of the medical body. This is the phase of the question to which we must give our attention, namely, the disorganization of the medical body.

This evil has been growing insidiously in all its various forms for some time, and has been passed unnoticed by the powers which should have throttled it in its infancy. It may be that the older members of the profession have been swollen with false pride, deeming such considerations beneath their dignity, or it may be that they have had no idea of the extent or character of this pernicious evil. Be that as it may, our investigation has disclosed a state of affairs tolerated or disregarded by the medical fraternity which should never have been permitted to exist. When the true state of affairs was brought to the notice of your committee, some were in favor of adopting extreme measures, but the more conservative element prudently advised the adoption of persuasive measures. The first action of the committee was to send out return postcards to every member of this society. In the short interval of ten days, 225 cards were returned—all save three of which were in favor of this movement. The three cards against it bore no signatures. At the subsequent meeting of the committee, such returns as this showed us that the profession was alive, and, from the remarks on some of the cards, heartily willing to cooperate with the committee. The cards against this movement were without signatures, so that, whatever opposition there is to it, comes from those who have not the courage of their convictions. A second notice was sent to all those members who had not returned the card, reminding them that they had either overlooked or misplaced it, and up to the present date, we have 320 members of this society pledged to support this movement. We are aware of some few men who are opposed to it, but only one of them has had the courage to sign himself against it. The committee charitably refrains from mentioning his name.

In the short time that this committee has had to act, it is sorry to say that it cannot offer a more complete report. Your committee shall not spare its efforts until every man is located who has the audacity to stand for such a system as has been brought to your notice. While almost two-thirds of the members are pledged to this movement, there yet remain about two hundred who have not stated their position, and the committee shall continue its investigation until every member has taken a definite stand. We believe that after every one who has not answered has been interviewed, there will be very few

in the opposition. As the committee has been very conservative in the measure it proposes to adopt, it hopes that it will be heartily approved by this society. Many radical suggestions were offered, but, after much deliberation, it resolved to adopt the following:

Resolved, That the proposed amendment, if adopted, shall not apply to present contracts, but shall prohibit any extension or renewal of the same—except by action of the society, at a regular meeting, upon request of the interested physician.

Add a section to Chapter II of the Constitution and By-Laws to be known as section 13, and to read as follows: No one shall become a member of this society or continue as such who engages in contract-work, unless it be governmental in character, but this shall not prohibit an agreement for a particular case nor apply to examinations for an adequate fee.

We further recommend: 1. That the President appoint from time to time at his own discretion, special committees to use their influence on any man who continues this unethical practice whether he be a member of this society or not.

2. That a special committee be appointed to confer with the membership committee to devise ways and means to get all desirable men in this society.

3. We recommend that the proper authorities of this society bring this matter to the attention of the State Society for the purpose of gaining its support.

4. That this society meet more frequently, that its members become more united, and that self-interests be put aside for the common good of all.

We feel that the above resolution, amendment, and recommendations are not too radical. The various faddists, quacks, pseudoscientists, and charlatans are the sins of our neglect. Are we going to commit more sins of omission? The evils dealt with in this report and practiced by the supposedly regular members of the profession should not be tolerated any longer. We must separate the unethical from the ethical practitioner. We must ostracize him as we have the advertising quack. Nay, we must do more. We must use antagonistic measures if persuasion fails to convince him of his error. The methods of antagonizing him have been discussed by the committee, but it is not our purpose to speak of them in this report. We address ourselves so strongly because we feel sure that after all the cards have been returned, there will be very few offenders left. To these men we offer fellowship not only in this society, but, through it, also to the society of the state and nation. The membership of this society consists of practically all the physicians of Erie county. Many of the men who do not belong to this society are those who have graduated in medicine within the last few years, and most of these can be easily induced to become members.

The above is the situation which is now confronting us. It is high time for us to separate the sheep from the goats. If medicine is a profession, if it stands for something more than mere commercialism, if it possesses every quality that is honorable and noble, then we should do nothing to degrade it. We should rather raise it until it has reached the climax of ethics, and its standard has become the highest obtainable. But this can never be accomplished by suffering the contaminating presence of men who engage in degrading work to remain within this or any other medical body. If there be any set of men who wish to continue this debasing practice, let them be separated from those who have enough principle and honor to deem such work beneath the dignity of the medical profession. We therefore recommend that this society use every possible effective measure to bring this about, and purge itself of all those who are unworthy to be regarded as its members. We have not been guided by animosity or actuated by malice in arriving at our conclusion. We have no feeling of resentment toward any man. We have consistently considered big and little offenders alike. We believe in the utmost charity to all, for even your committee has among its members men who are or have been violators. Yet, in justice to our profession, besmeared in the mire of commercialism, we have been compelled to suggest the proposed amendment. With the confidence of honesty, we submit it for your consideration, knowing that the urgency of the situation demands every honorable man's support.

COMMITTEE ON CONTRACT-PRACTICE,
EDWARD E. HALEY, Chairman.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

IOWA: Capitol Building, Des Moines, September 19-21. Sec., Dr. Guilford H. Sumner.

MASSACHUSETTS: State House, Boston, September 12-14. Sec., Dr. Edwin B. Harvey.

MISSOURI: Kansas City, September 25-27. Sec., Dr. Frank B. Hillier, Jefferson City.

NEW YORK: September 26-29. Mr. Harlan H. Horner, Chief of Examinations Division, Department of Education, Albany.

New Jersey June Report

Dr. H. G. Norton, secretary of the New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, June 20-21, 1911. The number of subjects examined in was 9; total number of questions asked, 135; percentage required to pass, 75. The total number of candidates examined was 77, of whom 66 passed and 11 failed. Twenty-one candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Johns Hopkins Univ....	(1901) 83.3; (1908) 85.6;	(1910) 81.8
University of Maryland....		(1906) 75.
College of Physicians and Surgeons, Baltimore....		(1910) 75, 76.3
Woman's Medical College of Baltimore....		(1910) 83.1
Harvard University Medical School....		(1910) 82.3, 85.3
Long Island College Hospital....		(1910) 80.5, 81.1, 83.5
University and Bellevue Hosp. Med. College..		(1911) 76.7, 78.2, 83.6
New York Homeopathic Med. College and Hospital.		(1910) 79.1
Columbia University, College of Physicians and Surgeons, 78; (1909) 84.6; (1911) 79.3.		(1906)
Albany Medical College		(1911) 81.5
Jefferson Medical College, (1900) 75; (1909) 80.6, 85.7; 79.2; (1911) 79.5, 80.5.		(1910)
University of Pennsylvania, (1896) 82.5; (1902) 85.5; 77.8; 82.5; (1910) 79.8, 81.1, 83.3, 84.5, 84.6, 84.9; 76.6, 78.5, 78.7, 82.8, 83.7, 84.5.		(1909) (1911)
Medico-Chirurgical College of Philadelphia, (1896) 84.9; 87.3; (1906) 79.6; (1907) 79.2, 81.6; (1908) 75.5; (1909) 78.1; (1911) 76.5, 84, 85.4, 85.7, 86.1.		(1904)
Hahnemann Medical College and Hospital, Philadelphia, 78.5, 79.1, 85.4.		(1911)
Woman's Medical College of Pennsylvania....		(1911) 81.3
University of Texas....		(1911) 85.9
University College of Medicine, Richmond....		(1908) 78.2
McGill University, Quebec....		(1908) 86.1
Queen's University, Kingston, Ontario....		(1901) 80.7
University of Naples, Italy.....		(1896) 76.5; (1909) 77.8
University of London, England....		(1905) 86.8
University of Berlin, Germany....		(1910) 76.3

FAILED

College		
Kentucky School of Medicine.....	(1892) 59;	(1906) 65.3
University of Michigan, Dept. of Med. and Surg..		(1880) 66.6
St. Louis College of Physicians and Surgeons.....		(1906) 73.1
Long Island College Hospital....		(1908) 65.
Hahnemann Medical College and Hospital, Philadelphia, 71.1; (1910) 73.3.		(1908)
University Medical College, Richmond....		(1910) 72.9
University of Naples, Italy, (1895) 68.8; (1905) 70.4;		(1910) 73.3

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College....	(1904) (1910)	Illinois
University of Louisville....	(1908)	Kentucky
Cornell University Medical College.....	(1903) (1910)	New York
University and Bellevue Hosp. Med. College....	(1909)	New York
New York University Medical College.....	(1885)	Illinois
Long Island College Hosp...	(1899) New York; (1910)	Maine
New York Homeopathic Medical Coll. and Hosp..	(1897)	New York
Woman's Medical College of Pennsylvania.....	(1908)	Colorado
Jefferson Medical College....	(1906)	Delaware
University of Pennsylvania, (1900) New York; (1908) New Hampshire; (1910) Maine.	(1908)	Delaware;
College of Phys. and Surg., London, England...	(1910)	Vermont
University of Palermo, Italy....	(1906)	New York
University of Geneva, Switzerland....	(1896)	New York
University of Naples, Italy....	(1898)	Colorado
Owens College, Manchester, England.....	(1895)	Delaware

The following questions were asked:

ANATOMY

1. Describe the endocardium. 2. Give origin, branches and parts supplied by the musculo-spiral nerve. 3. Name five muscles of the shoulder and arm. Give origin, insertion and action of any *one* of the five. 4. Name the muscles attached to the great trochanter of the femur. 5. What are the functions of the superior mesentery vein? 6. Mention an anastomosis between the portal and systemic veins. 7. Name, locate and describe the largest of the cranial ganglia. 8. What nerves supply the knee-joint? 9. In what respect do the pulmonary differ from other veins? 10. Describe the facial vein. Name its tributaries. 11. Describe the long saphenous vein. 12. What muscles (*a*) elevate, (*b*) depress the os hyoides and the larynx? 13. In fracture of the shaft of the radius near its center, what muscles are involved in displacement of the fragments? 14. Name and describe the different glands of the stomach. 15. In what way do the axillary and deep cervical glands communicate with each other.

HISTOLOGY

1. Give composition of human blood. 2. Mention different leukocytes and derivation of names. 3. What are thrombocytes? 4. Give structure of the mucous membrane of the stomach. 5. What cells line the larynx, trachea, bronchi and bronchioles?

PATHOLOGY

6. Give rôle of white blood-cells in infection. 7. What is hemolysis? 8. Define agglutination. How produced? 9. Define atelectasis; give causes and effects. 10. What will cause and what are the effects of exclusion of bile from the intestines?

BACTERIOLOGY

11. Give chemical composition of bacteria. 12. What are proteid bodies? Name varieties and describe them. 13. What substances must be supplied to bacterial cells for their food? 14. Mention other bacterial functions besides disease production. 15. What are the fermentations of milk? Which are innocuous and which harmful? State effects of pasteurizing and boiling.

PHYSIOLOGY

1. What chemical change is necessary for blood coagulation? 2. Is the alkalinity of the blood increased or diminished by exercise, lactation or digestion, and why? 3. State the normal amount of blood in a man weighing 160 pounds. How is it renewed after hemorrhage? 4. What is absorption, and by what process is it accomplished? 5. What conditions favor, and what conditions retard, absorption? 6. State the origin and function of lymph. Is it coagulable, and why? 7. What tissues and organs are developed respectively from the ectoderm, mesoderm and entoderm? 8. What are the Wolffian bodies, and what becomes of them? 9. Discuss the corpus luteum. Does it indicate pregnancy? Explain. 10. What principal centers are located in the medulla? 11. What are the functions of the brain membranes? 12. Compare the functions of the white and gray matter in the encephalon. 13. Name, *in order of importance*, the organs in which animal heat is developed. 14. What variations of temperature are found in different parts of the body? Why? 15. Can a man live on an exclusively meat diet? Why?

CHEMISTRY

1. (*a*) How does uric acid form in the system? (*b*) Of what are gout stones principally composed? (*c*) What is the solubility of uric acid? 2. (*a*) State the origin of tartaric acid and other tartrates. (*b*) Give chemical formula of cream of tartar. (*c*) Rochelle salt. 3. (*a*) What are fats chemically? (*b*) What becomes of the fats ingested and what is the province of adipose in the body? (*c*) Under what condition does fat occur in the urine? 4. (*a*) What is nitroglycerin? (*b*) How is it used in medicine and what is its effect on the vascular system? 5. (*a*) What is chloral hydrate? (*b*) How does chloral act as a poison? 6. (*a*) What is the difference between ferrous and ferric salts? (*b*) Give examples by formulas. 7. (*a*) What is potassium permanganate? (*b*) Give formulas and its action as a disinfectant. 8. (*a*) Which are the two iodides of mercury? (*b*) Give formulas. (*c*) What is the difference in action of the "ous" and "ic" compounds of Hg? 9. (*a*) Define the term hardness as applied to a potable water? (*b*) What does the presence of an abnormal quantity of chlorides in a drinking water indicate? 10. Name three pigments normally present in human urine. 11. (*a*) Name three univalent elements. (*b*) Name a monobasic, a dibasic, and a tribasic acid radical. 12. (*a*) Give source, symbol, valency and atomic weight of bromin. (*b*) What is acidum hydrobromicum dilutum (U. S. P.). 13. (*a*) What is oxalic acid? (*b*) For what salt is it liable to be mistaken? (*c*) Give treatment for poisoning by oxalic acid. 14. (*a*) What are the principal constituents of cow's milk? (*b*) Give chemical explanation of the souring and curdling of milk. 15. Name the alkaloids of belladonna, aconite, nux vomica and opium.

PRACTICE OF MEDICINE

1. Describe bubonic plague. 2. Differentiate tonic and clonic spasms. 3. Describe the different stages of syphilis. 4. Differentiate cystic and renal hematuria. 5. Give the causes and symptoms of cholelithiasis. 6. Give the causes and symptoms of edema glottidis. 7. Give four physical signs present in consolidation of lung tissue. 8. How would you determine high blood-pressure? What is its significance? 9. What, how much and how often should a four-months-old bottle-fed baby be fed? 10. Differentiate ataxia and aphasia, and give the location of the lesion in each. 11. Where is bronchial breathing heard normally? What does it indicate when heard elsewhere? 12. What is the significance of (1) epithelial; (2) granular; (3) fatty and (4) waxy casts in the urine? 13. Describe the prodromal symptoms, giving the duration of each in (1) scarlet fever; (2) measles, and (3) small-pox. 14. Give three causes for specific gravity of the urine (1) under 1010, and (2) over 1030, and the significance of each. 15. Describe vesicular, papular and pustular inflammation of the skin and name a disease of which each is characteristic.

SURGERY

1. Diagnosis and treatment of perforation of intestine in typhoid fever. 2. Give etiology, diagnosis and treatment of empyema of the frontal sinus. 3. Give symptoms and treatment of ischiorectal abscess. 4. Treatment of compound fracture of tibia and fibula. 5. Describe tertiary syphilis of the pharynx. 6. Diagnosis of embolism of the mesentery. 7. Mention the causes of incontinence of urine. 8. What are the symptoms of cerebral compression? 9. Describe in detail lumbar puncture. 10. Diagnosis and treatment of papilloma of the bladder. 11. Give indications for drainage. 12. Mention the causes and symptoms of stricture of the rectum. 13. Give treatment of tubercular peritonitis. 14. Give diagnosis of lipoma of the neck. 15. Give diagnosis and treatment of aneurysm of the femoral artery.

OBSTETRICS AND GYNECOLOGY

1. What are the characteristics of the female pelvis and how does the male pelvis differ therefrom? 2. Describe the vulva (*a*) of a virgin, (*b*) of a multipara. 3. Describe (1) the process of fecundation, and (2) the uterine changes resultant. 4. Describe pelvimetry and name the five most important measurements. 5. Describe Walcher's posture and its uses. 6. What precaution as to the urine should be employed in the case of a pregnant woman? 7. Differentiate accidental hemorrhage, placenta prævia, postpartum hemorrhage. 8. Describe fully the treatment you would use in postpartum hemorrhage. 9. How should asphyxia neonatorum be managed? 10. Cause, preventative treatment and curative treatment of ophthalmia neonatorum. 11. What causes puerperal infection? How may it be prevented? 12. How do you prepare a patient for an operation which is to involve both the abdominal surface and the vagina? 13. What are the causes of pelvic abscess? Outline treatment. 14. Describe the menopause and name the diseases common to that period of life. 15. Differentiate vaginitis and vaginismus and give treatment of the latter.

MATERIA MEDICA AND THERAPEUTICS

1. What remedies may be used to induce emesis? Give dose of each. 2. Name three mineral acids with therapeutic properties of each. 3. State uses and doses of sabol, guiacol and heroin. 4. Give the source and physiological action of opium; name four preparations with adult dose of each. 5. Define alteratives; name five used in medicine with the therapeutic properties of each. 6. Compare the physiological action of aconite and digitalis; give adult dose of each. 7. Describe symptoms of ptomain poisoning; outline the treatment. 8. Differentiate the effects of strychnia, nitroglycerin and strophanthus on the arterial system. 9. Mention three vegetable and three mineral astringents with adult dose of each. 10. Specify the precautions to be used in administering chloroform; give reasons therefor. 11. Diagnosticate uremic poisoning; outline an eliminative treatment. 12. Explain the action and effects of phenacetin; give adult dose. 13. Prescribe in proper form for chronic bronchitis in an adult; explain the action of the ingredients used. (Candidates must not sign name or initials.) 14. Enumerate the official preparations of arsenic; state the dose of each. 15. Give three examples of animal extracts with indications for the use of each.

HYGIENE

1. Define hygiene. 2. What would you advise a person to do that fears pneumonia, rheumatism, nephritis, insomnia? 3. What is absolutely necessary for the maintenance of the healthy functions of the body 4. What is an antiseptic? What is meant by the term disinfection? 5. Name five disinfectants. 6. Why does a heated atmosphere charged with moisture render sunstroke liable? 7. State the time that quarantine should be imposed in (*a*) diphtheria; (*b*) small-pox. 8. What instructions should be given a nurse respecting the prevention of the spread of scarlet fever from the sick room?

MEDICAL JURISPRUDENCE

9. State the difference between criminal and civil malpractice. 10. Name some of the violent causes of death. 11. Give in detail the condition which would warrant the induction of abortion by the practitioner. 12. Define the word "insanity." 13. Name the post-mortem signs external and internal of recent drowning. 14. When is induced abortion lawful and what are the conditions in which it is called for? 15. In a case of suspected infanticide, what are the evidences of live birth?

HOMEOPATHIC MATERIA MEDICA AND THERAPEUTICS

1. Compare arsenic, camphor and ipecac in measles. 2. Compare china, rhus, and bryonia in bilious fever. 3. Compare secale, belladonna, and crocus, in uterine hemorrhage. 4. Compare nitric acid, hepar, and hyoscyamus in cough. 5. Compare phosphorus, arsenic, and autimonium tart., in edema of the lungs. 6. Prescribe for chill and fever, thirst, quick pulse, hot, dry skin, nervous excitement, piercing pains in chest and dry cough. 7. Prescribe for idopathic intercostal neuralgia in anemic subjects, with deranged uterine function. 8. Prescribe for constant thirst, nausea, prostration, burning in stomach, violent belching, vomiting. 9. Prescribe for sick headache from wine, study, sedentary habits, beginning in the morning and increasing all day, worse after eating or from noise. 10. Prescribe for delirium with incoherent muttering, furious, loquacious, small quick pulse, skin cold and clammy. 11. Give treatment for apoplexy. 12. Give treatment for gall-stone colic. 13. Give treatment for mastitis. 14. Give treatment for acute articular rheumatism. 15. Give treatment for earache.

Book Notices

MEDICAL DIAGNOSIS. By W. Mitchell Stevens, M.D., M.R.C.P., Fellow of University College, London. Cloth. Price, 25 shillings net. Pp. 1571, with 177 illustrations. London: H. K. Lewis, 136, Gower St., 1910.

The plan of this book is to give an outline of the symptoms and signs of a disease and then to state under the head of differential diagnosis the other diseases from which, because of close or superficial resemblance, it is to be differentiated. This plan has been consistently carried out and the salient points in medical diagnosis and differential diagnosis are well set forth. It is of value, therefore, to the student who is preparing for examination and who wishes to have these facts in tabular form. It may also prove of service to the physician who, when confronted by a puzzling case, wishes to fortify himself in his tentative diagnosis by excluding other possible confusing diseases. He will here find listed the conditions which might cause error.

There is a lack of consideration of the subject from the standpoint of physiology and pathologic anatomy, which would enable one to see more clearly the reasons for symptoms and signs. The book is too much on the order of the quiz-compend,

which has its place, though not a very honorable one. And the same character of the book makes it for the practitioner, while not an unsafe guide, yet one that helps him very little, for it does not make him think and reason enough. Diagnosis should be the result of a logical mental process and not a search through the index to see if perchance the right name may be found.

There are numerous good illustrations. The text is seldom ambiguous; in fact, the sentences, and even paragraphs, are at times little more than lists of symptoms or of diseases. Most of the facts, as stated, are such as one would agree with. In a book of this kind it is inevitable that there should often be omission of what seems to the reader an important symptom—perhaps his pet symptom—or an emphasis laid on what he would regard as a feature of minor importance. But on the whole one can endorse what is said, and the criticism is rather on the plan of the work, as already stated.

HANDBOOK OF DISEASES OF THE EYE. A Text-Book for Students and Practitioners. By Harry Caldwell Parker, M.D., Clinical Professor of Ophthalmology, Indiana University School of Medicine, Indianapolis, Ind. Cloth. Price, $2 net. Pp. 303, with 116 illustrations. Philadelphia: F. A. Davis Co., 1910.

Now that the general practitioner has been urged, in view of the activity of the "doctor of optometry," to inform himself concerning the elements of ophthalmology—and in particular the practice of refraction work so as to be ready to "fit glasses"—one looks with more than ordinary lenience on the multiplication of undergraduate text-books dealing with ophthalmic science. While Parker's manual is no better and no worse than the dozen other compends that are accessible to the student, undergraduate and postgraduate, yet it lacks in the section given over to the determination of the refraction and dismisses in less than thirty pages what might well occupy fifty. Doubtless, this is due to the restricted character of the book; perhaps, after all, the various problems that confront one in "fitting glasses" are not to be solved by reading school-books but by actual practice and instruction in clinics and elsewhere.

Although few of the illustrations are original, they are better than one sees in the average manual of ophthalmic practice. The descriptions of diseases and of operations are, as a rule, lucid and effective.

UNSOUNDNESS OF MIND. By T. S. Clouston, M.D., LL.D., F.R.S.E., Formerly Lecturer on Mental Diseases in the University of Edinburgh. Cloth. Price, $2.50 net. Pp. 360, with 14 illustrations. New York: E. P. Dutton & Co., 1911.

This book was written for the intelligent layman. The author has long been known as England's foremost asylum superintendent, whose writings, especially his clinical lectures on mental diseases, have for many years been considered classic. Having due regard for the difficulties attending the popularization of such an all-embracing subject as that included under the title "Unsoundness of Mind," we think that the author has executed his task most satisfactorily. The book is written in an easy and semipopular style, and the views expressed are in general up to date. In our opinion, not only the layman, but also the busy practitioner, will find something of value in this treatise.

MENTAL MECHANISMS. By William A. White, M.D., Author of "Outlines of Psychiatry," Superintendent Government Hospital for the Insane, Washington, D. C. Nervous and Mental Disease Monograph Series No. 8. Paper. Price, $2. Pp. 151. New York: The Journal of Nervous and Mental Disease Publishing Co., 1911.

In eight chapters, mostly reprints from medical journals in which each chapter had been published as a complete article, the author gives a real insight into Freudian psychology. The author does not merely show the results of Freud's influence—he is entirely submerged in the mental mechanisms of the latter's psychology. Irrespective of the fact that "Mental Mechanisms" contains the views of only one school, and that the youngest and most vehemently opposed, the book is worth reading. The author possesses the happy faculty of being able to restate his teacher's opinions in a more interesting and entertaining style than the teacher himself could bring to bear on the subject.

Medicolegal

Tracing Cause of Cold

(Crawford vs. Maine Central Railroad (N. H.), 78 Atl. R 1073)

The Supreme Court of New Hampshire holds that where there was evidence that a woman's illness which terminated in her death, was a natural and probable result of the condition created by the railroad company's negligent failure to keep one of its stations properly warmed, it was no defense to say that colds are contagious, and that she might have contracted her cold by exposure to contagion as well as from exposure to the low temperature of the station. The difficulty with that contention in this case was that there was no evidence of exposure to contagion; either that colds of any description were generally prevalent, or that any person with whom the woman had come into contact suffered in that way. The only cold in the evidence was the one she had. Whatever the truth may be as a matter of science, there was competent evidence in the case that colds might be produced by such exposure as befell this woman through the company's failure to properly warm the room provided for waiting passengers. The possibility of other sufficient causes of which there was no evidence did not preclude the jury from ascribing the cold to the cause of which there was evidence, if the connection, in the light of all the evidence, appeared to them sufficiently clear and definite. The possibility that something else might have been the primary cause thereof was not an answer as matter of law. It was for the jury to determine the probable cause on all the evidence. If a person were at the same time exposed to two sources of contagion equally liable to infect him with disease, whether, if so infected, the infection were due to one cause or the other would be mere speculation or conjecture. But, if there were proof of exposure to one source of infection sufficient to cause the disease, the possibility of other sources of infection, without proof of exposure, would not render the conclusion that the disease was due to the known exposure a guess or conjecture. The latter case would present a question of probability for the jury; the former would not. If the cold in question was a "grip cold," solely due to exposure to a germ, and not due to the exposure in the company's station, it was entirely immaterial where it was contracted.

Death During Administration of Chloroform Accidental—Not Within Exceptions to Accident Insurance Contract —"Surgical Treatment"

Beile vs. Travelers' Protective Association (Mo.), 135 S. W. R. 497

The St. Louis Court of Appeals reverses here an order setting aside a verdict for the plaintiff on an accident benefit certificate issued to her husband, who died while chloroform was being administered to him by a physician preparatory to performing a surgical operation on him for fistula, his death occurring after from 20 to 30 drops of the chloroform had fallen on the mask, without having had the knife applied to him and without surgical treatment having been begun, unless administering chloroform was "surgical treatment."

One of the defenses was that the insured did not die by "accident," within the meaning of the contract; but it is held that it was error to hold as a matter of law that the death was not by accident. In order for the dilatation of the heart to have been the natural and probable consequence of the administering of the chloroform, and therefore not an accident, it must have been a result which was expected, or one which ought to have been expected, and this could not be without the insured knew of the defects in his heart and other organs, or they were so apparent to the ordinary powers or means of perception that he ought to have known of them.

Nor does the court consider that it was a defense that the benefit certificate provided that the benefit did not cover injuries "fatal or otherwise, resulting from any poison or infection, or from anything accidentally or otherwise taken, administered, absorbed or inhaled," because the Supreme Court of Missouri has held that "such exceptions do not cover medicine (even though it contain poison) or anything taken or administered in good faith to alleviate physical pain, even though it results in unexpected and unintentional death."

With regard to a special exception of the contract of death caused "wholly or in part by a bodily or mental infirmity or disease," the court thinks this clause meant nothing more than that, in order for the plaintiff to recover, the administering of the chloroform, and not bodily or mental infirmity, must have been the proximate cause of the death.

Lastly, the court is unable to agree with the contention that the death did result from "surgical treatment," within the meaning of another exception of the contract. The court gathers from reading certain definitions that "surgical treatment" means treating a disease or a patient by means of surgery, which in turn means applying manual operations or instrumental appliances to the affected part for the purpose of curing or relieving the bodily disease or ailment. Administering chloroform as was done in this case does not come within any of these definitions or meanings. It was not a manual operation or the application of an instrumental appliance, and was not resorted to as a remedy or for the purpose of curing or relieving the insured's ailment. It was administered as preparatory to the surgical operation; but so might have been his bath, and if he had died in his bath it would not be seriously contended that he died as a result of a surgical treatment. The most that might be claimed for the defendant was that the language of the exception was so vague and general, not identifying the subject-matter, that oral evidence was admissible to identify it, to show just what was comprehended within the term "surgical treatment," and that the jury should have been left to decide the matter as a question of fact. The jury found that "surgical treatment" did not include the administering of chloroform under the circumstances here disclosed, and the court is of the opinion that its finding was in accordance with the usual and ordinary understanding of the term.

Paralysis of Hand is Paralysis of "Either Extremities" and a Permanent and Total Disability

(Brotherhood of Locomotive Firemen and Enginemen vs. Aday (Ark.), 134 S. W. R. 928)

The Supreme Court of Arkansas says that it was contended that if the plaintiff Aday had permanent paralysis of his hand, that it was not "permanent paralysis of either extremities," and that he was not thereby "permanently and totally disabled or incapacitated from performing all manual labor" and entitled to the amount of his beneficiary certificate in the brotherhood. But the extremities of the body are four in number and "either" is one indifferently, any one of them; and the permanent paralysis of a hand resulting from a cut on the arm brought the plaintiff within the meaning of the term "permanent paralysis of either extremities." Moreover, the court can see no difference between the total incapacity of the beneficiary member by the loss of a hand by actual separation and its absolute loss of usefulness by paralysis thereof, and holds that the latter was such a permanent and total disability as was in the contemplation of the parties in the making of this contract. The undisputed testimony showed that his left hand was paralyzed, that the four fingers of it were atrophied or "dead—no feeling in them at all," as he expressed it; that he was unable to grasp anything; that he had very little grip in his thumb, and that his hand was getting worse all the time; and that because of it he was unable to perform, and compelled to retire from, any further railroad service whatever. Two of the three experts employed by the brotherhood to examine him testified that the left hand was paralyzed and the disability permanent, and the other that without an operation it was permanent paralysis; and the proof was undisputed that his condition was such that he could not procure the services of such an eminent specialist as would be able to perform the operation that might result in preventing the disability from continuing permanent. There was no conflict in this testimony. It was undisputed that his left hand was permanently paralyzed, unless, as one expert thought, it might possibly be cured by an operation by such an eminent specialist as the undisputed testimony showed he had no means to employ. Under such circumstances, there was no question for the jury, and the court did not err in directing a verdict in favor of the plaintiff.

Society Proceedings

COMING MEETINGS

American Electro-Therapeutic Association, Philadelphia, Sept. 6-7.
Medical Society of the Missouri Valley, Omaha, Neb., Sept. 7-8.
Washington State Medical Association, Spokane, Sept. 5-7.
Wyoming State Medical Society, Thermopolis, Sept. 4-5.

AMERICAN OPHTHALMOLOGICAL SOCIETY

Forty-Seventh Annual Meeting, held at New London, Conn., July 11-12, 1911

The President, DR. E. GRUENING, New York City, in the Chair

Officers Elected

The officers elected were named in THE JOURNAL, August 5, p. 490. The society will meet next year June 11-12, probably at Hot Springs, Va.

Four Cases of Acute Disseminated Myelitis, with Retrobulbar Degeneration of the Optic Nerves

DR. WARD A. HOLDEN, New York City: All these patients (adults) had sensory disturbances in the trunk and limbs, and more or less complete paraplegia. These conditions continue to the present time in two patients, while the other two are dead of respiratory paralysis. The fields of vision in the three cases in which they could be determined were peculiar. In one there was excessive eccentric contraction of the field with fair central vision, and in two there was hemianopia for certain test objects in one eye alone. No autopsy material was obtained other than a portion of the cervical cord in two cases. Photomicrographs of sections of these cords show characteristic foci of degeneration, and also the arteries, with cellular infiltration about them, running from the uninfiltrated pial sheath to the areas of softening.

A Case of Periodic Fugacious Episcleritis

DR. ALBERT C. SNELL, Rochester, N. Y.: A woman, 42 years old, had recurring superficial episcleritis at each menstrual epoch. There was a history of attacks extending over a period of five years and still recurring. The season does not appear to have anything to do with the occurrence of attacks.

Serum Treatment of Sympathetic Ophthalmia

DRS. GEORGE S. DERBY, Boston, and H. N. PRATT, Louisville, Ky.: The patient developed severe uveitis of the right eye following injury to the left. There was no improvement under inunctions and massive doses of salicylate. The injection of serum from a patient recovering from sympathetic disease was followed by marked improvement. A subsequent recurrence necessitated further injections of serum at intervals during eight weeks. The patient was discharged with useful vision. The same procedure was attempted in several other cases with different serums but without marked results.

DISCUSSION

DR. R. N. RANDOLPH, Baltimore: It really looks as if we had in this serum a powerful remedy for sympathetic ophthalmia, but the difficulty that exists in getting the serum makes it doubtful whether we are justified in changing our attitude toward injured eyes. There are more cases of this disease reported than there used to be and I think that this is largely due to the existence of a more venturesome spirit in treating diseased corneas by means of salicylate of soda. In the cases of children, particularly, I believe that we should take no risk.

DR. J. H. CLAIBORNE, New York City: Six or eight years ago Dr. E. B. Cobourn and I pursued a number of investigations along these lines. The results of these experiments were absolutely negative. Our conclusion was that one cannot influence in rabbits a sympathetic ophthalmia by the injection of a corresponding serum into the venous system.

Dystrophia Epithelialis Corneæ (Fuchs); Report of a Case

DR. ARNOLD KNAPP, New York City: My patient was a woman, aged 81, who, after a successful cataract operation, without signs of inflammation or glaucoma, developed these curious corneal changes. The other eye was operated on twelve years ago and presents similar, but more pronounced, changes in the cornea.

A Protest Against the Indiscriminate Use of the Organic Compounds of Silver in Ophthalmic Practice

DR. SAMUEL THEOBALD, Baltimore: These compounds are unquestionably more liable to produce conjunctival argyria than is silver nitrate. Before their introduction, this was a rare condition, being practically never seen except in old cases of trachoma. Now it is relatively common. For this reason, they should not be used when other remedies are really efficacious. An observance of this rule would very nearly limit their employment to gonorrheal and trachomatous conjunctivitis. Especially are they contra-indicated in catarrhal conjunctivitis, in which they are now so generally prescribed, because in a collyrium of zinc sulphate and boric acid we have a remedy that is more surely and promptly efficacious.

DISCUSSION

DR. LUCIEN HOWE, Buffalo, N. Y.: A very excellent report on this subject was made by a committee of the Section of Ophthalmology of the British Medical Association. It contained the statement that the proportions of silver in these compounds vary greatly. If they are as efficacious as some think, this is evidently not due to the amount of silver that they contain. Before adding to the amount of advertising that we have given to various proprietary compounds, it would be well for us to examine our records to see whether we do get the results that we think we get from them and whether we could not obtain as good results from some other remedies that we have known of for a long time.

DR. ALEXANDER DUANE, New York City: The only antiseptic that has a practical value in the limits of time that a solution in the eye can act is nitrate of silver. Therefore, we are thrown back on detergent solutions. In this capacity some of the silver compounds have an important value.

DR. WALTER B. JOHNSON, Paterson, N. J.: In employing nitrate of silver, one knows the strength of the solution in each instance, and there is very little danger of argyrosis. These proprietary medicines are not what we have been led to believe they are.

Excision of the Tarsus and Conjunctiva (Heisrath) in Old Trachoma

DR. J. H. CLAIBORNE, New York City: Expression has been considered as indicated for trachoma in the florid stage and for trachoma that is marked by cicatrization with abundant granulation. In the latter stages of the disease, however, the results of expression are disappointing. In the first patient, the result of the more radical procedure in both eyes was an entire cure. The result was the same in other cases. I consider this operation indicated in all cases of trachoma in which cicatrization has commenced, and in which pannus and keratitis are present. It should be done, however, only as a last resort. In cases in which expression will answer, this should be employed. My experience convinces me that the tarsal cartilage in a cicatricial state is the cause of all our woe in old trachoma. In the operation as performed by me, the hands of the operating surgeon alone are around the eye. The clamp used is the result of a number of experiments. The operation is practically bloodless, and can be done in from ten to fifteen minutes, thus differing from other methods.

A Case of Ring Sarcoma of the Ciliary Body

DR. A. N. ALLING, New Haven, Conn.: The region of the ciliary body was occupied by a flat, black, slightly prominent mass, which in part involved the iris, and at several points extended through the sclera, forming irregularly rounded prominences on the anterior surface. The growth was a sarcoma, composed of large endothelium-like cells and spindle cells.

DISCUSSION

DR. E. FUCHS, Vienna, Austria: I have seen four cases of ring sarcoma, in all of which the eye showed merely a swollen condition and a changed color. It is often impossible to make the diagnosis of sarcoma in these cases, because one finds the eye too intensely fixed.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Philippine Journal of Science, Manila

April

1 *Action of Tropical Sun on Men and Animals. H. Aron.
2 *Eradication of Beriberi From the Philippine (Native) Scouts by Means of a Simple Change in Their Dietary. W. P. Chamberlain.
3 *Case of Dysentery Caused by Balantidium Coli with Coincident Filarial Infarction of the Spleen. F. B. Bowman.
4 Some Observations on So-Called Flagellates, Ciliates and Other Protozoa Encountered in Water and in Human Stools. E. H. Ruediger.

1. **Action of Tropical Sun.**—Experimental research by Aron showed that under climatic conditions, even during the cooler seasons of the year in Manila, animals, such as rabbits and monkeys, which by nature have only a limited power of physical heat regulation, or animals the physical heat regulation of which is artificially inhibited (tracheotomized dogs) die if exposed to the sun, the body temperature rising to febrile heights. If the same animals are protected from the rays of the sun, or if the increase of heat due to radiation from the sun is compensated by an increased loss such as would be brought about by a strong wind, then the animals suffer no discomfort. Insolation of the skull alone is without effect if the body temperature is kept within normal limits. The post-mortem findings on the animals dying as a result of insolation show decided hemorrhagic lesions of the meninges in the brain, and in monkeys, in the heart. In animals without sweat glands the subcutaneous tissues are heated by the radiated heat from the sun to temperatures above those compatible with life. The human skin if exposed to the sun is warmed to about 3 to 4 C. above the normal skin temperature. An increase, even to the normal body temperature, is prevented by evaporation of sweat. The cooling effect of the sweat secretion causes a fall of the skin temperature even if insolation is continued during longer periods. The brown skin of Malays, while theoretically absorbing more heat in the sun, shows a smaller rise in temperature in the tropical sun than the skin of white men under similar conditions. As an explanation, it is believed that an earlier and better water evaporation by sweat secretion takes place. The air in the human hair, especially in black hair, under the influence of the tropical sun acquires temperatures far above those compatible with life. It was demonstrated by Aron that in the tropical sun a man with a colored skin is in a better position as regards heat regulation than is a man with a white skin.

2. **Eradication of Beriberi.**—The real factors in the eradication of beriberi from the Scout organizations have been a reduction in the amount of rice consumed and the addition of a legumen. The result was accomplished without the use of undermilled rice.

3. **Dysentery Caused by Balantidium Coli.**—During the past three years Bowman has seen ten cases of infection with *Balantidium coli*. Two of the ten cases terminated fatally, but the others have had no symptoms other than an occasional diarrhea. Even in the severe infections, the diarrhea was more or less intermittent in character, the parasites being found in the feces only during these attacks. This phenomenon is explained by Bowman in the following manner: The organisms, moving along in the submucosa, become so numerous as sometimes to form "nests" from which low inflammations develop, and which, proceeding to ulceration, cause erosion of the mucosa and set free the balantidia. At this time the organisms are found in the feces. In some areas the blood-vessels appear practically to be occluded by the number of balantidia present and this fact in itself is sufficient to initiate an inflammatory process by lowering the tissue resistance.

Journal of Minnesota State Medical Association and Northwestern Lancet, Minneapolis

July 15

5 German Measles, Measles Proper, and Scarlet Fever: The Official View. H. W. Hill, Minneapolis.

New Orleans Medical and Surgical Journal

August

6 *Surgical Treatment of Amebiasis. W. Seaman, U. S. Navy.
7 Public Health Problems Concerned in Amebiasis. J. A. White, New Orleans.
8 Lipomatosis of the Knee-Joint. P. A. McIlhenny, New Orleans.
9 Hypertrophy of Prostate: Its Surgical Treatment. C. W. Allen, New Orleans.
10 Infantile Diarrhea, Fermental Diarrhea; Causes, Symptoms and Treatment. J. W. Gregory, Texas.
11 Onion for Dropsy. E. M. Dupaquier, New Orleans.
12 Tympanotomy, Its Indications and Technic. H. Dupuy, New Orleans.

6. Surgical Treatment of Amebiasis.—The surgical treatment of intestinal amebiasis is advocated by Seaman. It is simple, free from danger and not beyond the skill of a surgeon of reasonable ability. It should, therefore, be maturely considered whenever a fair trial of other procedures has lead to no improvement of the patient's condition. Medical treatment and intestinal lavage *per vias naturales* is often unproductive of benefit.

New Mexico Medical Journal, Las Cruces

July

13 Glioma of the Retina. J. G. Holmes, Alamogordo.
14 Diagnostic Significance of Blood-Pressure Estimations. C. F. Beeson, Roswell.
15 Diet in Tuberculosis. L. S. Peters, Silver City.

American Journal of Medical Sciences, Philadelphia

August

16 *So-Called Larval Hyperacidity. J. Friedenwald, Baltimore.
17 *Amyotonia Congenita; Clinical and Pathologic Study. J. P. C. Griffith and W. G. Spiller, Philadelphia.
18 *Toxic Actions of Digitalis on Heart. H. C. Bailey, New York.
19 *Pathologic and Experimental Data Derived From Study of Acute Infectious Disease of Unknown Origin. N. E. Brill, New York.
20 *Intramuscular and Intravenous Injections of Antimony in Trypanosomiasis. C. N. B. Camac, New York.
21 Maculocerebral Degeneration (Familial). E. L. Oatman, New York.
22 Dystocia Due to Ventrosuspension of Uterus; Fetal Death; Cesarean Section. W. R. Nicholson, Philadelphia.
23 *Use of Ascitic Fluid for Nutritive and Other Purposes with Therapeutic Indications. H. S. Carter, New York.
24 Leukocytes in Early or Pre-Agglutination Diagnosis of Typhoid and Paratyphoid. J. F. Hultgen, Chicago.

16. Larval Hyperacidity.—Friedenwald's observations with this condition extend over a series of six cases. Of these, there are four males and two females. The ages vary between 26 and 58 years. The symptoms are largely those of a neurasthenia, evincing at the same time special manifestations of hyperchlorhydria, consisting of pain and pressure in the region of the stomach one hour after meals, and extending over a period of from one to one and one-half hours, and usually relieved at the end of this time, or at any time, by the ingestion of food. Acid eructations, nausea and occasionally vomiting of acid material are most prominent. The appetite is usually increased, though on account of the pain induced by the ingestion of food there is usually fear of eating. In not one of Friedenwald's cases could an epigastric painful area be detected, and occult blood was always absent in both gastric contents and in the stools. In all instances general nervous symptoms were manifested, as headaches, insomnia, lassitude, irritability and depression, with periods of discomfort alternating with accountable periods of well-being, the periods of discomfort often being induced by nervous influences, such as shock or anxiety. The quantity of gastric contents obtained is always large, varying between 214 and 368 c.c., always a most significant feature of this condition. The appearance of the contents is also characteristic, consisting largely of a watery secretion containing but little sediment. On standing, two layers are formed—a lower, slight in amount, but with solid sediment, and above a clear layer, larger in quantity. After centrifugalization the amount of solid sediment in proportion to the total sediment is constantly under 22 per cent., while the fluid content ranges as high as 90 per cent. Under normal conditions the amount of the solid sediment is as 40 to 60 to the total sediment; the variation from the normal is an additional evidence, therefore, of the presence of larval hyperacidity. The specific gravity of the gastric secretion varies between 1010 and 1014, reduced from the normal of between 1015 and 1020. The total acidity as well as the percentage of free hydrochloric acid is always normal, the former varying between 38 and 56, the latter between 30 and 44, though in the earlier period of digestion a high total acidity as well as a marked hyperchlorhydria is always manifested. The amidulin reaction is present in all instances. Numerous examinations were made on all the patients.

The treatment of the condition should be largely directed toward the management of the nervous system. In emaciated individuals the best results are obtained by means of a systematic rest-cure treatment. The diet should consist largely of three meals a day, together with intermediate feedings of liquid food. The dietary should contain an excess of proteids and fats, and but a moderate quantity of carbohydrates. Of the various proteid foods, milk, eggs and fish are to be preferred. Fats have a tendency to decrease the gastric hyperacidity, and are to be recommended. Of these, butter, cream and olive oil are especially useful. The carbohydrates are only permissible in the most digestible forms, and vegetables should be mashed and strained and taken in the puree form, free of all cellulose. Water is usually well borne, and may be administered in large quantities with benefit. All acid food, as well as stimulants, should be avoided. The alkalies, together with belladonna, are of great service in the treatment of this disorder. Good results are usually obtained from the use of hydropathic measures, as well as from massage.

17. Amyotonia Congenita.—From a review of the few cases yet reported with necropsy, the authors conclude that in the lighter cases the alteration may be confined to the muscles, and possibly, therefore, the disease is primarily muscular, but this inference is not fully warranted. In the intense cases the nervous system is affected in marked degree. The relations to muscular dystrophy are as yet undetermined. The points of resemblance to both these diseases cannot be ignored.

18. Toxic Actions of Digitalis.—The observations on which Bailey's paper is based were made on ninety patients under treatment with digitalis or digitalis bodies. The administration of the digitalis to these patients was conducted with great care, and improvement in the character and condition of the pulse, with relief from the symptoms, was the accepted indication for either stopping the drug or reducing the dosage. About 25 per cent. of the patients showed some form of toxic action. These observations were made during the course of another research, and many of them do not cover the entire period of the toxic action. Bailey says that the toxic effects of digitalis and related bodies may be divided into three periods with regard to their occurrence and severity. These toxic symptoms may usually be discovered in their earliest stages by careful and frequent sphygmographic observations. (1) Period of vagus stimulation; (2) period of depression of conductivity with masked vagus action; (3) period of marked muscular irritability with depression of contractility. Digitalis heart-block may be differentiated from ordinary heart-block and from vagus influence as a causative factor. Muscular irritability may be the first symptom observed, the other stages being short in duration and easily overlooked. Irritability from digitalis must be differentiated from the progress of the disease by careful observations of the different functions as evidenced by combined tracings. With therapeutic doses the rise of blood-pressure due to vasoconstriction is so slight that it may be disregarded, but with toxic doses it becomes of extreme importance. Cumulation occurs with digitalis and may last for a considerable period. Vomiting is probably a central effect of digitalis and is a sign that absorption is occurring. Pulsus alternans may be relieved by digitalis in some cases.

19. Acute Infectious Disease of Unknown Origin.—To supplement the clinical study of an acute infectious disease of unknown origin, which was published in the *American Journal Medical Sciences* for April, 1910, and abstracted in THE JOURNAL, April 30, 1910, p. 1476, Brill records his observation of a fatal case of the disease. This case opened the way to supply the lacking necessary pathologic data which would carry the study nearer completion, and at the same time to furnish additional evidence that the disease has no relationship with any of the typhoidal group infections. A solution

of the mystery, of what the disease really is, is no nearer completion than before. From this report the conclusions may be reached that the organs showed congestion and general parenchymatous degeneration such as would obtain in any intense infectious disease. It is noteworthy, in consideration of the fact that many believe this disease to belong to the typhoidal group infections, that the intestines showed none of the lesions which are characteristic of typhoid. The presence of *Staphylococcus albus* and *S. citreus* and unidentified bacilli, Brill believes, were most probably due to agonal or post-mortem invasion, and were non-pathogenic. The appearance of the patient on the last day of her illness was the clinical picture of coma, petechial eruption, carphology, paralysis of the sphincters and the rapid elimination of the heart action.

20. Abstracted in THE JOURNAL, August 12, 1911, p. 591.

23. **Ascitic Fluid for Nutritive and Therapeutic Purposes.**—The ascitic fluid used by Carter in these experiments was obtained from patients with cirrhosis of the liver, free from toxemia of any kind. The nitrogen content should be determined, as this is found to vary within fairly wide limits, 0.17 per cent. to 1 per cent. of nitrogen or more (blood-serum contains about 1 per cent. of nitrogen), and first tappings are apt to be higher in nitrogen content than subsequent ones from the same case. A few important points have been suggested by Carter's experiments on two dogs. In both instances the dogs remained well throughout the experiment, and showed no evidences of serum sickness, except when on large amounts of serum they were occasionally a little less lively, when also a transient edema about the site of injection might occasionally be seen for a few hours; this was, however, an exception. Carter says that it is apparently not advisable to attempt to give the full protein requirement by hypodermic, particularly if the nitrogen content of the fluid is low, as it necessitates injecting excessive volumes of serum, and under such circumstances a considerable portion of the liquid may be retained in the tissues as edema, and the urine temporarily decreased in amount, thus interfering, for a time, with the necessary elimination of toxins in an infection. While apparently the excessive volumes do not cause a true nephritis, it is, nevertheless, a serious matter to hamper the filtration power of the kidneys. This does not take place when moderate amounts are given for short periods. It is quite essential to give a fair amount of extra water to the system during the use of the hypodermic method, either by the mouth, rectum or hypodermically. It is best to begin with a single moderate dose and gradually increase to two doses daily, twelve hours apart, the actual amount depending on the nitrogen content of the fluid.

Judging from a limited clinical experience, Carter is led to believe that probably one or two doses only may be required to bridge over a desperate period. Probably also the daily dosage should not exceed 10 c.c. to 15 c.c. per kilo, depending on the nitrogen content. For any possible stimulating effect on growth (as in marasmus) the dose should be small, perhaps 2 to 10 c.c. per day. The theoretical indications for its use are suggested as follows: 1. In any condition in which there is need of protein which the organism cannot make use of when given in the ordinary way as food, but probably only for a short time. 2. In conditions in which the tissues are, so to speak, dried out; the percentage of fluid in the organs being lowered, as in intractable vomiting, diarrhea (acute), gastro-enteritis, in children especially, cholera, etc. 3. When the organism is being overdone by an infection for which we have not a specific antitoxin. 4. When for some reason the growth of the body is interfered with by unknown causes, as in marasmus. 5. In blood conditions, such as hemophilia, hemorrhage, melena neonatorum, where the hypodermic use of normal human serum has already been shown to be valuable, with the added advantage that ascitic fluid is easily obtained in large quantities.

In order to demonstrate any possible usefulness of ascitic fluid as a food when given by the hypodermic route, a series of nine children (eight suffering from the most extreme grade of acute gastro-enteritis or enterocolitis, and one from bronchopneumonia and enteritis) were treated by this method. It was thought best to use it only in patients who had been treated unsuccessfully by the usual methods, and which, consequently, were in the terminal stages of the disease, in order that the test should be the most severe; so too that any improvement might, perhaps, fairly and justly be attributed to the treatment under trial. The plan adopted was to give one injection and to watch the results, stopping at that point if definite improvement was shown. When the improvement was not so marked, repeated doses were given daily in increasing amounts. The nitrogen content of the fluids used varied from 0.34 to 0.4 per cent. nitrogen. Of the nine patients treated, two recovered absolutely, and one showed almost immediate improvement, which lasted for a week, at the end of which the child died, although the improvement had been continuous up to the day of death and the patient actually gaining in weight. No discoverable cause of death was found post mortem, although the autopsy was not done by an expert pathologist. In all three cases the action of the ascitic fluid was apparently perfectly definite, and showed itself within a few hours of the time of injection. Even allowing that only two patients were helped, a percentage of 22 per cent. possibly cured in the face of such desperate conditions as existed in all these cases makes it at least worth further investigation.

American Medicine, New York

July

25 Katharevousa and Scientific Medical Nomenclature. A. Rose, New York.
26 Artificially Cooled Hospitals. C. E. Woodruff, Manila, P. I.
27 Laboratory Investigations of Antiseptics and Germicides. N. Sulzberger, New York.
28 Therapeutic Nihilism. O. L. Mulot, Brooklyn, N. Y.
29 Arsenic. J. J. Sheridan, New York.
30 Capsules That Do Not Dissolve in the Stomach and Consequently Prevent Gastric Disturbance. E. G. Ballenger, Atlanta, Ga.
31 Fatal Gunshot Injury of Abdomen. H. Crutcher, Roswell, N. Mex.
32 Rectal Polypi in Children. M. L. Bodkin, Brooklyn.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

July

33 *Bromatotherapy. H. W. Wiley, Washington, D. C.
34 *Treatment of Chronic Universal Perihepatitis. R. W. Wilcox, New York.
35 *Physician and Infant Mortality. S. W. Newmayer, Philadelphia.
36 Surgical Diseases of the Stomach. L. J. Hammond, Philadelphia.
37 Delusion of the Tonic and Stimulant Effects of Alcohol. T. D. Crothers, Hartford, Conn.
38 Pen Palsy and Other Occupation Cramp Neuroses: Their Successful Treatment Made Possible by Psychoanalytic Measures Followed by Reeducation. T. A. Williams, Washington, D. C.
39 *Action of Animal Extracts on Bladder. I. Ott and J. C. Scott, Philadelphia.

33. Abstracted in THE JOURNAL, June 3, 1911, p. 1676.

34. **Treatment of Chronic Universal Perihepatitis.**—After considerable study, and more experimentation, it was found that antipyrin salicylate, in 10-grain doses, given every two to four hours, would relieve the symptoms and limit the duration of the exacerbations to a very few days or sometimes hours. Usually at the expiration of thirty hours the patient regains his normal condition.

35. **Physician and Infant Mortality.**—To remove from an annual loss of 150,000 deaths in the United States among infants under 1 year those deaths which are preventable, Newmayer says, requires the state and municipal authorities to educate the poor in the proper care of infants and the hospitals furnishing sufficient and intelligent medical and nursing care of the sick infant. There is also required of the medical profession a similar responsibility to those who can afford to pay for and need such medical service.

39. **Action of Animal Extracts on Bladder.**—In the experiments conducted by Ott and Scott on the exposed bladder of forty-five cats it was observed that thyroid extract produced strong contractions of the bladder, with the pelvic nerves intact. Prostate (¼ to 1 grain) increased the contractions of the bladder and also augmented their frequency. Parathyroid (½ grain) increased the tonus and height of contractions of the bladder. Epinephrin relaxed the bladder. Mammary gland (½ to 1 grain) had no action on the bladder. Pancreas (1 to 2 grains) produced strong contractions of the

bladder; in one case it caused a tetanic contraction four days after section of the nervi pelvici. Ovary (½ grain) increased the contractions of the bladder to a slight extent. Orchitic extract increased the contractions. Parotid (1 grain) considerably increased the extent and frequency of the contractions. Thymus (½ grain) increased the extent of the contractions. Brain extract increased the extent of the contractions.

Old Dominion Journal of Medicine and Surgery, Richmond

July

40 Comparison of Some Diseases Transmitted by Blood-Sucking Insects. W. McCaw, Washington, D. C.
41 Modern Management of Pneumonia. S. Baruch, New York.
42 Function of Government in Relation to Public Health. R. E. Byrd.
43 Dangerous Surgeons. W. K. McCoy, Gum Springs, Va.

Pennsylvania Medical Journal, Athens

July

44 *Typhoid in Pennsylvania—Past, Present and Future. S. G. Dixon and B. F. Royer, Harrisburg.
45 Can the County Society Help Members to be Better Business Men and How? F. E. Ross, Erie.
46 What is Needed to Make Non-Members Desirous of Joining County Medical Society. J. P. Strickler, Scottdale.
47 Dead-Beat List, Its Importance, and How We Established One in Lawrence County. W. A. Womer, New Castle.
48 *Spina Bifida and Its Surgical Treatment with Description of an Efficient Osteoplastic Operation. W. W. Babcock, Philadelphia.
49 Clinical Diagnosis of Laryngeal Neoplasms. C. P. Grayson, Philadelphia.
50 Histologic Diagnosis of Laryngeal Neoplasms. D. B. Kyle, Philadelphia.
51 Systemic Tests in Cases of Laryngeal Neoplasms. J. W. Boyce, Pittsburg.
52 *Gall-Bladder Dyspepsia. J. A. Lichty, Pittsburg.
53 *Gastric Manifestations of Nongastric Disease. C. R. Jones, Pittsburg.
54 *Diagnosis and Treatment of Chronic Constipation of Colonic Origin. J. Daland, Philadelphia.
55 Dysuria Due to Hyperacidity of the Urine. H. D. Jump, Philadelphia.
56 Surgical Treatment of Hyperthyroidism. J. D. Singley, Pittsburg.
57 Dr. Beaumont's Experiments on St. Martin. T. L. Hazzard, Pittsburg.
58 Early Operation for Psoas Abscesses. J. K. Young, Philadelphia.

44, 52, 53 and 54. Abstracted in THE JOURNAL, Oct. 29, 1910, p. 1580.

48. **Surgical Treatment of Spina Bifida.**—In the operation employed successfully in four cases by Babcock the edge of the dura where it blends with the inner surface of the lamina is incised on either side and stripped from the bony canal for the entire distance of the defect. The dura is then sutured over the cord by a continuous fine chromicized catgut suture, thus restoring the dural canal. The margins of the bony canal are freely exposed and with a pair of Satterlee's bone forceps the laminæ are divided the entire length of the defect. This is repeated on the opposite side, forming two ribbons of bone and fibrous tissue, each consisting of a chain of imperfect spinous processes and laminæ, having attachments above and below. These bony bridges are then united to the median line by sutures of chromicized catgut, thus restoring the bony canal and the position of the rudimentary spinous processes. A knife is then passed through the erectorspinæ group of muscles, splitting off on either side a broad strip of muscle with its overlying aponeurosis. This likewise is left attached above and below and these two musculo-aponeurotic bridges are slid to the median line reinforcing the bony canal. Thus there is placed immediately over the cleft a solid mass of firm tissue.

Journal of Michigan State Medical Society, Battle Creek

August

59 Surgery of the Pancreas. H. E. Lewis, Chicago.
60 Early Recognition and Treatment of Hyperthyroidism. F. Y. Cronk, Kalamazoo.
61 Two Types of Gastric Surgery. S. C. Graves, Grand Rapids.
62 Practical Value of the Psychoanalytic Method in the Treatment of the Neuroses. T. Klingmann, Ann Arbor.
63 Problems in Infant Mortality. F. Duffield, Detroit.

Boston Medical and Surgical Journal

July 27

64 Stiff and Painful Shoulders as Explained by Subacromial Bursitis and Partial Rupture of the Tendon of the Supraspinatus. E. A. Codman.
65 Experimental Pneumectomy. W. C. Quinby and G. W. Morse, Boston.
66 *Interlobar Pulmonary Exudates. A. K. Stone, Boston.
67 *Hemolytic Skin Reaction in Carcinoma. E. H. Risley, Boston.
68 *Chemical and Microscopic Findings with Reference to Gastro-Intestinal Tract in Pernicious Anemia. A. E. Austin, Boston.
69 Diagnosis and Treatment of Breast Abscess. W. P. Coues, Boston.

66. **Interlobar Exudates.**—The signs of an encapsulated interlobar exudate of considerable size as enumerated by Stone are: A zone of dulness, more or less high pitched and tympanitic in character, with presence of bronchovesicular breathing over the dull area, often accompanied with friction sounds, if the condition is acute; below the dull zone the resonance and respiratory sounds are more nearly normal; on the left the tympanitic area of the stomach (Traube's space) is retained and on full inspiration the more normal area below the zone of dulness increases in size; the dull triangle, the paravertebral triangle, in the opposite thoracic cavity is not present as is usual in large, free exudates. If the exudate is on the right side, the heart is apt to be extremely displaced to the left (A. Fraenkel); if on the left, the displacement is not so marked as with free fluid (Stone); the radiograph will show a shadow extending from the apex of the heart towards the head of the humerus, or from the sternal junction of the fourth rib on the right outward to the head of the humerus; the fluoroscope will show the same shadow band and also the diaphragm in motion.

If the exudates are serous, they can entirely disappear, as can other serous exudates in the chest or abdominal cavity. The small interlobar exudates which come to clinical notice are practically all purulent. After severe pleuritis usually accompanying a pneumonia, small encapsulated collections of fluid are left in depressions along the sulci between the lobes. These are frequently infected with the offending organism and become purulent. Such collections of pus, of a tablespoonful or two, are to be found by careful percussion and by the presence of tender spots. Remembering the lines of the interlobar spaces, one presses in each intercostal space with the tip of the finger along these lines, until a tender spot is discovered. This and the percussion note and the exploring needle will usually serve to locate the small empyema immediately beneath the thoracic wall. Similar inclusions of exudate take place between the lobes of the lung during the course of a pneumonia. They become infected and consequently purulent. Very frequently these small interlobar collections of pus become foul and gangrenous and empty themselves spontaneously through the bronchi, and they frequently are considered as lung abscesses, and for the most part very properly belong in that category.

One of the practical conclusions that one comes to after experience and study of thoracic exudates is that, if a short exploring needle does not find fluid, the concealed exudate is usually in the interlobar spaces surrounded by lung tissue and the needle will have to penetrate this lung tissue in order to reach the exudate. Therefore, one should consider carefully the dangers of lung infection from the needle which may possibly be dipped in pus in the cavity which it enters. If it seems necessary to use the long needle, it is to be borne in mind that the axillary region, a little below the normal position of the interlobar sulcus, is to be chosen as the most probable place for immediately entering the cavity and that here the intervening layer of lung tissue will have the least thickness. The same region is likewise the point of election for the removal of ribs and the exploration of the interlobar spaces.

67. **Hemolytic Skin Reaction in Carcinoma.**—This paper is an analysis of the results obtained from a series of 100 patients on whom skin reaction test used by Elsberg for the diagnosis of carcinoma was done. The technic used by Elsberg was followed in every detail in order that the results might be thoroughly reliable. It consists, in general, in injecting 5 minims of a 20 per cent. solution of washed normal red corpuscles into the subcutaneous tissue of the forearm of the patient. Within from three to twelve hours a definite reaction takes place, which is evidenced by the appearance of a slightly raised, slightly tender area about 2 by 3 cm. in area, which takes on a slightly brownish tinge, which may change to a maroon or a dirty greenish-yellow. This lasts eight to

twenty-four hours and then gradually fades. The cases tested were divided as follows: Of twenty-seven cases of (1) cancer in various stages; (2) patients in whom cancer had just been removed; and (3) cases in which the diagnosis was not determined pathologically, a positive reaction was obtained in nine cases, a negative reaction in sixteen cases, doubtful in two cases. Of seventy-three non-malignant cases the reaction was positive in fifteen cases, negative in fifty-five cases and doubtful in three cases. Risley believes that the test is only suggestive and is rendered practically valueless as a diagnostic aid because of the fact that there are undoubtedly present in the blood of many patients other lysins of unknown nature which bring about hemolysis of varying degrees. This test, therefore, as the test done *in vitro*, fails to be of any practical value in the diagnosis of malignancy. It is highly significant, but will require further investigation or a more refined technic before becoming of value.

68. **Chemical and Microscopic Findings.**—Austin agrees with A. Schmidt that the atrophy of the intestinal glands does not cause pernicious anemia nor conversely does pernicious anemia cause any changes in the intestinal mucous membrane which are not produced by many other agencies.

Long Island Medical Journal, New York

July

70 Pathologic Aspects of Primary Tumors of the Spleen. R. H. Fowler, Brooklyn.
71 History of St. Peter's Hospital of Brooklyn. E. J. Morris.
72 Cumberland Street Hospital. M. D. Jones, Brooklyn.
73 Progress Made in Ophthalmology During the Past Year. J. C. Hancock and H. M. O'Reilly.

New York Medical Journal

July 29

74 *Prostatic Suggestions. V. C. Pedersen, New York.
75 *Largest Volunteer Life-Saving Corps in the World. J. Sobel, New York.
76 Routine Examination of Milk. J. A. Roddy, Philadelphia.
77 Case of Infestation with Necator Americanus in a Native of Madras, India. R. C. Rosenberger and W. Brinton, Philadelphia.
78 Hospitals for Inebriates. T. D. Crothers, Hartford, Conn.
79 Overdoing in Prophylaxis and Early Diagnosis of Pulmonary Tuberculosis. C. Rayevsky, Liberty, N. Y.
80 Prevention of Myopia in School Children. W. H. Bates, New York.
81 Resistance of the Street Virus to Antiformin. F. Proescher, Pittsburgh.

74. **Prostatic Suggestions.**—That there is a period in prostatic disease which is being more definitely recognized than previously which rests on the condition of the bladder mucous membrane due to the disease, is the principal point made by Pedersen. He says that if the mucosa is in good condition and the prostate gland has begun to obstruct, the best time for operation is at hand. Delay until the mucosa is greatly injured will mean hazard and likelihood that the injury will be permanent and beyond repair. When the mucosa of the bladder has begun to suffer, it is often because the obstruction by the prostate gland and the cystitis have reached a degree which soon leads to serious results on the kidneys and ureters above. The mere removal of an enlarged and obstructing prostate gland may be mechanically possible and performed without death, but if a bladder is left behind so badly damaged from chronic cystitis as to render functional restoration impossible and as to leave the symptoms proceeding from the bladder virtually unchanged, then the operation has failed of its ideal success. If the prostate gland is merely enlarged, obstructs none or very little, and the bladder is in good condition, operation is not justifiable. If the bladder is changed from inflammation beyond recovery, and if the catheter may be successfully passed, in most cases irrigation is preferable and more conservative than operation.

75. **Largest Volunteer Life-Saving Corps in the World.**—The origin and work of the Little Mothers' League of New York are described by Sobel.

Lancet Clinic, Cincinnati

July 29

82 The Thorax. B. M. Ricketts, Cincinnati.
83 Life-Insurance Companies as Factor in Progress of a Great Nation; Problem of the Uninsured. L. H. Montgomery, Chicago.
84 Repair of the Torn Pelvic Floor. A. P. Cole.
85 Scientific Versus Amateur Psychotherapy. R. Reed.
86 Destruction of Surface and Cavity Neoplasms by Desiccation. A. W. Nelson, Cincinnati.
87 Gall-Bladder and Bile-Ducts. W. D. Haines, Cincinnati.

Ophthalmology, Seattle

July

88 Industrial Education of the Blind. W. H. Taft, Washington.
89 *Hitherto Undescribed Term in Skiascopy. J. H. Claiborne, New York.
90 Intra-Ocular Irrigation After Cataract Extraction. C. Lukens, Toledo, Ohio.
91 Recurring Corneal Erosions. J. S. Wyler, Cincinnati.
92 Treatment of Granular Ophthalmia and Its Complications by the Sub-Conjunctival Injections of a Solution of Cyanid of Mercury. R. H. Elliot, Madras.
93 Native Gun-Powder Injuries of the Eye. R. H. Eliot, Madras.
94 Traumatic Paralysis of the Orbicularis Palpebrarum; Retinitis Proliferans. W. B. Weidler, New York City.
95 Simple Bacteriologic Examination of the Conjunctival Sac. H. S. Gradle, Chicago.
96 *Does Cutting of Optic Nerve Elicit Perception of Light? L. Emerson, Orange, N. J.
97 *Mydriatic Ozena. J. N. Rhoads, Philadelphia.
98 Relation Between General Arterial Sclerosis and Increased Tension in Eye-Ball. W. H. Snyder, Toledo.
99 Smith Operation for Cataract. A. J. Timberman, Columbus, Ohio.
100 Total Blindness from Toxic Action of Wood Alcohol, with Recovery of Vision Under Negative Galvanism. S. L. Ziegler, Philadelphia.

89. **New Term in Skiascopy.**—The sign to which Claiborne refers and which is characteristic of spherical errors (the behavior of the shadow in spherical errors), he says, is to be seen only when the mirror is turned in a circle, or rotated on an anteroposterior axis. He uses the concave mirror, and employs skiascopy for the purpose of qualitative, approximately quantitative, estimates of refraction and the proving of the functional examination. When the mirror is rotated on the anteroposterior axis, either in spherical myopia or hypermetropia, the shadow moves in the circle, and ultimately always in the same direction with the movement of the mirror. It resembles the turning of a wheel on an axle, or a revolving circle. The shadow chases itself around the pupil. In hypermetropia, speaking from the standpoint of the concave mirror, as the circular movement commences, the shadow is observed to creep from the opposite side of the pupil and chase itself in a circle from left to right, when the mirror is moved from right to left; or, from right to left, when the mirror is moved from left to right. The movement in this case is against the movement of the mirror, and yet each shadow chases the other in the same direction. In the case of myopia, the shadow moves with the movement of the mirror, and starts from the quadrant in which the circular movement of the mirror starts and chases itself around the pupil as in hypermetropia. The movement in both cases, therefore, is purely circular, and the shadow appears to move always in the same direction, though in the two cases it starts from opposite directions. The degree of the error is indicated by signs which are well known to all those conversant with this method—a gray slow shadow indicating high error, a black rapid shadow low error.

96. **Cutting of Optic Nerve.**—This question is answered by Emerson in the affirmative. In a case of glaucoma he cut the optic nerve and the patient stated that he saw "lightning." There is no doubt in Emerson's mind that the cutting of the optic nerve elicited the sensation of light.

97. **Mydriatic Ozena.**—For a few years back Rhoads has noticed that some of his patients emanate a fetid nasal odor a short time after the first instillation of a mydriatic. Cases that had the slightest trace of ozena before the instillation of drops were not recorded. The odor diminishes with the effect of the drops, consequently four hours after the last drops have been put in many patients have very little if any odor, and when they come back for "syne myd." examination, or to have their glasses verified there is not the slightest trace of it. The odor comes and goes with the mydriatic.

Medical Record, New York

July 29

101 Case of Pellagra Which Had Its Origin in Pennsylvania, Probably in Philadelphia. M. B. Hartzell, Philadelphia.
102 Elephantiasis Non-Parasitica. W. G. Thompson, New York.
103 Case of Ostitis Deformans (Paget's Disease). K. M. Vogel, New York.
104 Scrofula. S. Ehrenreich, New York.

105 Flat-Foot in Women and Children. S. Epstein, New York City.
106 Gastric Ulcer Perforating Into the Colon. M. Gross, New York.
107 Habit, the Jaw and Character. J. J. Walsh, New York.

Bulletin of Johns Hopkins Hospital, Baltimore

July

108 *Stereoscopic Roentgenography of Chest with Special Reference to Diagnosis of Pulmonary Tuberculosis. K. Dunham, W. W. Boardman and S. Wolman, Baltimore.
109 *Paroxysmal Hemoglobinuria; Blood Studies in Three Cases. W. L. Moss, Baltimore.
110 *Calcification of the Costal Cartilages, the Cardiothoracic Index and Other Signs of Pulmonary Tuberculosis. W. W. Boardman and K. Dunham, Cincinnati.
111 *Experimental Studies on Tuberculo-Protein Hypersensitiveness and Their Possible Applications. A. K. Krause, Saranac Lake, N. Y.
112 *Variations in the Leukocyte Count in Normal Rabbits, in Rabbits Following the Injection of Normal Horse Serum and During a Cutaneous Anaphylactic Reaction. W. L. Moss and G. L. Brown, Baltimore.
113 *Use of Antiformin in the Examination of Sputum for Tubercle Bacillus. W. W. Boardman, Baltimore.
114 *Serum Treatment of Hemorrhagic Diseases. W. L. Moss and J. Geller, Baltimore.
115 *Concerning the Much-Holzmann Reaction. W. L. Moss and F. M. Barnes, Washington.

108. **Stereoscopic Roentgenography of Chest.**—The object of this paper is to call attention to the principles and technic of stereoscopic *x*-ray examinations, and to describe the alterations in the normal chest shadows, which the authors believe to be characteristic of pulmonary tuberculosis. The shadows within the chest cavity are divided into three main groups: first, the "heavy central shadow," extending irregularly from the upper boundary of the chest cavity to the diaphragm; second, the "hilus shadow," radiating irregularly to a distance of four or five centimeters on either side of the fifth, sixth and seventh dorsal vertebræ; and third, the "linear markings" seen in the lung fields. The "heavy central shadow" is cast by the vertebræ and the mediastinal contents; the heart, aorta and other large vessels, trachea, esophagus, lymphatics and connective tissue. The hilus shadow is cast by the primary branches of the pulmonary vessels with their contained blood, the walls of the primary bronchi, and the lymphatic and fibrous tissue surrounding these structures. The shadows in the lung fields are subdivided into two groups; the heavy trunks and the fine linear markings. The heavy trunks are the shadows of the large branches distributed to separate lobes of the lung, the linear markings are the shadows cast by the smaller branches distributed to the various lobules of the separate lobes. In cases of pulmonary tuberculosis, changes are noted in the hilus shadow, the heavy trunks and especially in the linear markings. The hilus shadow shows usually an irregular increase in area and density with here and there small irregular shadows of very marked density. These bright areas of great density are due to the presence in the chest of calcified caseous or fibrous glands, while the increased area and density of the hilus shadow is due to a general increase in the fibrous and lymphatic tissue which accompanies a local or general mediastinitis. Such changes alone are regarded by the authors as of very slight diagnostic value as regards the presence of active tuberculosis, since other infections may produce the mediastinal changes and the calcified glands, although probably of tuberculous origin, indicate an old process more or less healed. In fact the presence of calcified glands, the other conditions being favorable, may be taken as a good prognostic sign. The heavy trunks extending toward the involved area usually appear broader, denser and less regular in outline than in the normal. Here again this change in the heavy trunks is not necessarily tuberculous in origin, so that too great importance must not be attached to this change alone. The fine linear markings appear broader, denser and less regular in outline, frequently their course is studded, sometimes almost to obliteration of the lines; they appear to cross and interweave, producing a delicate network of varying-sized mesh. The anatomic explanation of this altered shadow picture the authors are not at this time ready to discuss, but they firmly believe that the increase in the hilus shadow, the thickening of the trunks, together with the alterations in the linear markings, increase in density and breadth, studding, interweaving and extension to the periphery, constitute a shadow picture characteristic of early pulmonary tuberculosis. As the lesion progresses the alterations become more marked, the linear markings are more and more broken up and irregular, the studdings become larger and denser and the interweaving closer, until eventually the whole area appears as a more or less homogeneous shadow of increased density, due to the presence of gross areas of consolidation within the lung.

109. **Paroxysmal Hemoglobinuria.**—The serum of patients suffering from paroxysmal hemoglobinuria, Moss found, contains a complex hemolysin, of amboceptor-complement nature, which is capable of bringing about the solution of the patient's own corpuscles, corpuscles of other paroxysmal hemoglobinuric patients, and of all other individuals, as far as tested. Patients suffering from paroxysmal hemoglobinuria are not confined to one group, as determined by the iso-agglutination reaction, and their serum may contain normal isohemolysin in addition to the hemolysin characteristic of their disease. The auto-amboceptor may be absorbed from patient's serum, leaving the iso-amboceptor and conversely the iso-amboceptor may be absorbed, leaving the auto-amboceptor, thus enabling each to be tested separately on any given set of corpuscles. Only the amboceptor component of the hemolysin of paroxysmal hemoglobinuria is peculiar to the disease. The complement differs in no way, so far as tested, from that present in normal serum. The amboceptor peculiar to paroxysmal hemoglobinuria differs from other known hemolytic amboceptors in that it will unite with the red blood-corpuscles only at a low temperature in the presence of complement, and furthermore, in that it is capable of bringing about the solution of the patient's own cells (auto-hemolytic action) and those of other members of the group to which the patient belongs, as well as the cells of members of other groups. Hemolysis due to the autohemolysin of paroxysmal hemoglobinuria, unlike normal isohemolysis, may occur entirely independently of agglutination. The red cells of three cases reported by Moss showed a variable and usually increased resistance to hypotonic salt solution, never a resistance less than that of normal corpuscles. All three cases gave a positive Wassermann reaction.

110. **Signs of Pulmonary Tuberculosis.**—The small pendulous heart, calcified cartilages, narrow interspaces and excessive sloping of the ribs, are held to be not only valueless, by the authors, but as absolutely misleading, if considered as positive signs in the radiographic diagnosis of pulmonary tuberculosis.

111. **Tuberculo-Protein Hypersensitiveness.**—Hypersensitiveness to tuberculo-protein, Krause believes, is most likely never handed down to the third generation. This conclusion is based on tests made on nine animals, the grandchildren of sensitized females through the female line. The fact that a number of animals were born sensitive over 100 days, and several 379 days, after their mothers' last injection Krause regards as direct evidence that the transmission may be one of anaphylactic antibody and not of the antigen. He says that the possibility of maternal inheritance is more or less irregular and inconstant. It depends largely on the degree of sensitiveness of the mother at the time of pregnancy. The degree of sensitiveness of the offspring as a rule varies directly with that of the mother. The mother's sensitiveness is heightened by repeated applications of antigen, and, conversely, tends to die out with time unless renewed by subsequent injections. The degree of sensitiveness of the offspring accordingly varies, depending on the time that has elapsed between the mother's last dose and the birth of the offspring. The degree of sensitiveness that an animal inherits tends to diminish as it increases in age and size. Animals of the same litter may vary greatly in the degree of sensitiveness which they inherit.

112. **Leukocyte Count in Normal Rabbits.**—The normal variation in the total leukocyte count taken at the same hour each day of rabbits kept as nearly as possible under constant conditions, Moss and Brown found to be very great, at times reaching nearly 100 per cent. They observed quite regularly a diurnal cycle in which they are inclined to ascribe the increase in the number of leukocytes to the influence of digestion. They observed that an increase in the total leukocyte count was participated in, as a rule, by both the polymorphonuclear

and small mononuclear leukocytes, but usually by the latter to a greater extent than by the former. The relative values (percentage values) of the polymorphonuclear and small mononuclear leukocytes bear a reciprocal relation to each other; that is, an increase in the percentage of one is accompanied by a decrease in the percentage of the other. They were unable to observe that the intravenous injection of normal horse serum in doses varying from 0.1 c.c. to 5 c.c. or the intradermal injection of 0.01 c.c. normal horse serum in either sensitized or non-sensitized rabbits had any definite or constant influence on the total or differential leukocyte counts, three hours or longer after injection.

113. **Antiformin in Examination of Sputum for Tubercle Bacillus.**—Boardman recommends the use of sodium hypochlorite solution (antiformin) in the examination of sputum for tubercle bacilli not only in hospitals and dispensaries, but in the laboratory of every private physician. He holds that the general adoption of this method, combined with repeated examinations, will do much towards reducing the percentage of cases clinically diagnosed as definite pulmonary tuberculosis, in which, however, an absolute diagnosis cannot be made. Of far greater value than the finding of tubercle bacilli in the sputum of cases clinically diagnosed as definite pulmonary tuberculosis, is the possibility which this method offers of demonstrating bacilli in the cases still classed as only probable or doubtful, thereby enabling us to enforce a vigorous and systematic treatment at a time when such treatment is of most avail.

114. **Serotherapy of Hemorrhagic Diseases.**—The authors point out that the use of serum injections, the injections of defibrinated blood, and direct transfusion seem to have yielded better results in the treatment of hemorrhage than any other measures. As to the choice between these three procedures, doubtless direct transfusion would be the ideal method were it not for the technical difficulties.

115. **Much-Holzmann Reaction.**—The authors concur in the prevalent conclusion that the Much-Holzmann reaction has no diagnostic significance.

Chicago Medical Recorder

July

116 Case of Blood Transfusion for Postoperative Anemia. H. N. MacKechnie, Chicago.
117 *Abuse of Local Treatment in Gynecology. H. T. Byford, Chicago.
118 Tuberculosis of the Kidney, Ureter and Bladder. S. Dahl, Chicago.
119 Dissertation on Calomel. J. C. Warbrick, Chicago.

117. Abstracted in THE JOURNAL, June 17, 1911, p. 1842.

Washington Medical Annals, Washington, D. C.

July

120 *Cutaneous Lesions Associated with Leukemias. H. H. Hazen, Washington, D. C.
121 Psychotherapy and Its Limitations. E. E. Mayer, Pittsburg.
122 Need of Neurologic Training in Psychotherapeutic Practice. T. A. Williams, Washington, D. C.
123 Acute Pancreatitis; Operation, Recovery. H. H. Kerr, Washington, D. C.
124 *Influence of Pregnancy on Diseases of the Eye. D. K. Shute, Washington, D. C.
125 Three Cases of Placenta Prævia. J. J. Mundell, Washington, D. C.
126 School Laggards. H. C. Macatee, Washington, D. C.

120. **Cutaneous Lesions and Leukemias.**—In the review of about sixty cases occurring in the literature Hazen says it can be seen that they can be divided into (1) acute lymphatic leukemia, (2) chronic lymphatic leukemia, (3) splenomyelogenous leukemia, (4) chloroma, (5) multiple myeloma, (6) lymphodermia perniciosa, to which grouping Dr. Strobel's case belongs, and (7) mycosis fungoides. In relation to the last it is interesting to note that Pardee and Zeit have recently reported a case of mycosis fungoides which later turned to a lymphatic leukemia. The lesions consist of pigmentation, edema, vesicles, papules, nodules, tumors, especially of the face, urticaria, diffuse erythrodermia, macules and pruritus. Histologically, the lesions are probably infiltrations of cells escaped from the blood, and not proliferation of preexisting lymphoid tissue. Treatment should be directed towards the general condition and towards the relief of itching and the prevention of cutaneous infection. The Roentgen ray would probably do more to help the skin lesions than any other therapeutic agent.

124. **Influence of Pregnancy on Diseases of the Eye.**—This paper is essentially a plea for systematic and careful examination of the eyes of pregnant women by obstetricians, with the view of safeguarding the vision and even sometimes the lives of these women.

American Journal of Urology, New York

July

127 Rational and Efficient Method of Treating Acute Gonorrheal Urethritis. F. Kreisal, Chicago.
128 Control of Prostitution and Venereal Diseases in Country and Abroad. F. Blerhoff, New York.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

July 22

1 Some Latter-Day Intrusions of Surgery on the Abdomen. C. P. Childe.
2 Primary Sarcoma of the Vermiform Appendix. G. Wright.
3 Importance of Drainage in Septic Conditions of the Uterus. J. T. Maclachlan.
4 Adeno-Papilloma of the Rectum. R. Parker.
5 *Surgical Interference in Cancer. A. Paine and G. W. Nicholson.
6 *Influence of Calcarous Drinking-Water in Health and Disease. P. G. Lewis.
7 Congenital Deficiency of Speech Areas. A. E. Tait.

5. **Surgical Interference in Cancer.**—Experimental study has convinced Paine and Nicholson that the behavior, after operation, of two tumors in contiguity lends support to the view that the increased virulence of the recurrence is mainly due to increased blood-supply. It is occasionally stated that this increase is due to the heightened general metabolism of the body called forth by the neoplasm, which, on removal of its main mass, is made use of by such portions as have remained undisturbed. That this is not so was demonstrated by the behavior of two tumors on opposite sides of the body, whose blood-supply is quite independent. In such a case, of which the authors had six, removal of one tumor, even if large, produced no difference in the rate of growth of the other, though this be small. Furthermore, a tumor of a slowly growing series often recurs rapidly after operation; such rapid recurrence may even take place during a negative phase; and the transplantations from an operated tumor (which has recurred rapidly) into healthy mice do not show an increased rate of growth in any way proportionate to that of the recurrence. In eleven out of forty-eight operations—that is, in 23 per cent.—the recurrence was both early and virulent, its rate of growth being in some instances two or three times as rapid as that of the primary tumor or as of the tumors of the remaining mice of the series. This increase in the virulence, the authors claim, is mainly due to the remaining fragments having a very rich blood-supply and not to relief of tension or pressure.

6. **Influence of Calcareous Drinking-Water.**—Lewis claims that there is no evidence that hard water has any bad effect; on the contrary, all the evidence is the other way.

Lancet, London

July 22

8 Clinical Study of Cardio-Vascular Degeneration. J. M. Bruce.
9 *Differential Diagnosis of Over-Distention of the Lung and Pneumothorax. H. Walsham.
10 Permanence of the Cure of Syphilis by Salvarsan. J. McIntosh and P. Fildes.
11 *Acute Dilatation of the Stomach. C. R. Box and C. Wallace.
12 *General Subcutaneous Non-Renal Edema as a Familial Affection. F. H. Edgeworth.
13 Sarcoma of the Penis. H. M. Galt.
14 Case of Anterior Dislocation of the Semilunar Carpal Bone. W. R. Bristow.
15 Case of Plus-Pressure Anesthesia for Exploratory Thoracotomy. F. H. Wallace.
16 *Infarct of the Transverse Colon. H. T. Gillett.
17 Cases of (1) Chronic Pancreatitis and (2) Carcinoma of the Pancreas. G. Y. Thomson.
18 Feeding Experiments in Fowl Spirochetosis. A. Balfour.
19 Fatal Case of Phlegmonous Inflammation of Duodenum Following Impaction of a Fish-Bone. G. Taylor and C. E. Lakin.

9. **Overdistention of Lung and Pneumothorax.**—In pneumothorax, Walsham says, the shadow of the collapsed lung can always be seen, while in the overdistended lung it is never so seen.

11. **Stomach Dilatation.**—Six new cases are cited by Box and Wallace to support in the main their former contention that the pressure exerted on the duodenum by the dilated stomach is an important factor in the production of obstructive symptoms. Beyond reiterating the importance of combining lavage with the prone position nothing new is offered as regards treatment.

12. **General Subcutaneous Non-Renal Edema as Familial Affection.**—Six children born to healthy parents developed a subcutaneous edema at ages varying from 1 to 15 weeks. In one case it was slight and confined to the face, and the child recovered; in the other five, death ensued after a period of from one to sixteen weeks. In three, at least, of the cases no albumin was present in the urine. In the two cases examined post mortem no evidence of nephritis was found. All the patients suffered from a more or less marked diarrhea shown by green liquid motions before, in some instances only a few hours before, the occurrence of the dropsy. The children thus suffered from an intestinal catarrh and the dropsy was a related phenomenon. Edgeworth suggests that the edema may have been due to a damage to the walls of the capillary blood-vessels by poisons absorbed from the alimentary canal without the occurrence of any change in the excretory capacity of the kidneys. Thus in one of the cases it was found that the administration of calcium chlorid diminished the edema. The occurrence of intestinal dropsy in six successive children suggests to Edgeworth the possibility of an inborn defect in the walls of capillary blood-vessels whereby they may be more suceptible to poisons circulating in the blood than are the capillaries of normal individuals.

16. **Infarct of Transverse Colon.**—A woman, aged 49, had been troubled with hemorrhoids for some time, but was otherwise well, till she woke in the night with severe sense of pain in the epigastrium and flatulence. She blamed the cocoa she had had for supper. The next day diarrhea began and the pain in the abdomen increased. On the second day the diarrhea continued and there was nausea. Blood in the stools was first noticed in the afternoon. During the following night she had two actions of the bowels; both were practically pure blood, bright in color, and only very little fecal matter (perhaps ½ ounce in weight). Some clots were present of the size of half a hazel-nut—about 5 ounces of blood in each stool. This condition lasted for several days with vomiting, abdominal rigidity, no distention, pain below the navel and across the abdomen. The pulse and temperature were normal. A distinct thickening could be made out between the navel and the ensiform cartilage; it was tender and moved slightly on respiration. At the operation the transverse colon for the greater part of its extent was found to be of a dark purple color; the walls were greatly thickened. It did not look gangrenous. The ascending colon was anastomosed to the lower part of the descending colon. The patient did well for the first twelve hours. Then she had tetanic spasms, which continued at intervals of a few minutes for nearly twelve hours when she died. There were minute hemorrhages in the walls of the colon which were microscopically shown to be in a condition of infarct. The branches of the colica media were empty; no emboli were found; there was no peritonitis, but there were hemorrhages in the transverse mesocolon. There was a small amount of blood-stained fluid in the peritoneal cavity. Microscopic examination of the mesenteric arteries did not show any sclerotic changes. There was an old mitral lesion, with some narrowing of the orifice, and a few vegetations on the edges of the valve.

British Journal of Children's Diseases, London

July

20 Atelelosis: Progeria. H. Gilford.
21 Suppurating Ovarian Cyst in Girl, Aged 10 Years, Probably Infected from Hairpins Impacted in the Vagina. H. J. Paterson.
22 Epidemic Anterior Poliomyelitis. N. P. Marsh.
23 *Early Cardiac Paralysis and Hemiplegia in Diphtheria. C. Burrows

23. **Cardiac Paralysis and Hemiplegia in Diphtheria.**—On the eighth day of an attack of severe faucial and nasal diphtheria the earliest suggestion of the coming cardiac trouble presented itself; the first sound of the heart, which up to this time had been quite clear, was noted to be "distant" in quality. For this reason the child was given epinephrin by mouth—m x of a 1 in 1,000 solution—every four hours. For the next three days the first sound of the heart retained the same distant quality, the pulse keeping quite regular. On the twelfth day vomiting occurred. The face was pallid, and the pulse was small but regular. The quality of the heart-sounds remained as before, but the rhythm of the beats was beginning to be disturbed, the short space being shortened, and it was evident that cardiac paralysis had set in. There was still albumin in the urine. All nourishment by mouth was withheld and the patient given rectal feeding, consisting of peptonized milk every four hours, to each of which m xx of the epinephrin mixture was added. Nothing was given by mouth. During the next twenty-four hours the child vomited twice. On the thirteenth day the cantering rhythm or the *bruit de galop* was observed. The pulse was rapid but not irregular. For the following four days the vomiting and retching were very frequent, and continued for eight days altogether, but with lessening frequency. On the fifteenth day the cantering rhythm was still present, the apex-beat being within the nipple line at this time. The sounds were fairly strong. On the seventeenth day there was frequent vomiting, and the heart was much dilated, the apex-beat being ½ inch outside the nipple line. The pulse was very rapid, as were also the heart-sounds, but the cantering rhythm was not heard.

At this time tincture of digitalis, m v, was added to each rectal feeding. Before the administration of the digitalis in the rectal feedings the pulse-rate was 124. The next day the pulse-rate was 132, and the day following the pulse remained small and very irregular. On the third day of the administration of digitalis, the pulse-rate fell to 72. The tincture of digitalis was then only given in every second rectal feed. The following day it was given only in every third feed, and the pulse-rate keeping at 72 to 80 the digitalis was omitted altogether three days afterwards. The pulse-rate kept the same for a week when it slightly increased in rapidity (88-100) and remained much the same until the child's discharge from the hospital. The patient thus appeared to benefit from administration of the digitalis. The nasal twang of the voice continued until the fifty-ninth day of the disease. On the forty-second day the knee-jerks were found to be absent. On the forty-third day paralysis of the left upper limb occurred, the child lifting and moving this arm about with the right arm, which was quite normal. A few days after the paralysis of the arm was noted the left leg was also found to be paralyzed. There was no aphasia. No knee-jerks were present on either side, although the right leg was quite readily moved by the patient. On the fifty-sixth day some difficulty in swallowing presented itself with some dribbling of saliva from the mouth. The diaphragm was not affected. Left internal paralytic strabismus was still present. Thirty days after the onset of the hemiplegia, the left arm and leg had both almost recovered their normal state, the only paralyzed muscles being the extensors of the left thumb and the peronei muscles of the left leg. This condition remained unaltered up to the time the child was discharged from the hospital. Six months afterward the extensors of the left thumb were still weak, and the flexors overacting drew the thumb towards the palm. The child consequently picked up objects with this hand awkwardly. The hand-grip was weak, but seemed to be a trifle stronger than it was four months previously. The muscles of the left arm and forearm seemed a little stiff, but all the movements were free. She could walk better than when she left the hospital, there being almost imperceptible dragging of the left foot; the peronei muscles were, however, still weak, so that the foot could not be thoroughly everted. No knee-jerks were obtainable on either side. The child's health was good and her mental condition excellent. The right arm and leg were quite normal; the heart appeared to be quite sound.

Clinical Journal, London

July 12

24 Common Affections of the Genito-Urinary System in Childhood. R. Hutchison.
25 Treatment of Some Fractures. J. J. Clarke.
26 Anesthetics in Abdominal Operations. J. Blumfeld.

July 19

27 Suppurative Antrum, Acute and Chronic. S. Hastings.
28 *Fourteen Consecutive Successful Laparotomies for Acute Intussusception in Infants. E. W. Roughton.

28. **Laparotomies for Acute Intussusception in Infants.**—There was no mortality in this series of fourteen cases reported by Roughton. The patients were all operated on with the least possible delay and without any previous treatment by inflation or injection. In all the cases the invagination occurred during the first year of life. The oldest was 12 months and the youngest 4 months. Ten of the children were males and four females. One case was enteric, the lesion being a few inches above the ileocecal valve; one was ileocecal ileocolic, i. e., after reducing the common ileocecal invagination a few inches of ileum which had prolapsed through the valve had to be drawn out. The other twelve cases were of the ordinary ileocecal variety, and in nearly all of them it was noticed that the caput cæci was the last part to unfold; in other words, the apex of the intussusception must have been formed by the invaginated caput cæci, and not by the ileocecal valve itself as is often stated in text-books. Roughton thinks that in nearly every case of intussusception the trouble arises from what might be called want of tact on the part of the ileocecal valve. If the child's bowels are disordered, unduly active peristalsis hustles the contents of the small intestine along so fast that it tries to pass the valve before it has been sufficiently digested. In four of Roughton's cases there was a definite history of diarrhea, vomiting or constipation preceding the onset of the intussusception, and he believes that the more often one inquires for a history of previous gastro-intestinal disturbances the more often will it be found that intussusception occurs in children whose bowels are already disordered by flatulence or diarrhea. In one case no tumor was palpable even under the anesthetic, the reason being that the tumor was very small and soft; it was of the enteric variety. The absence of a lump, therefore, must not deter the surgeon from opening the abdomen. Roughton is strongly of the opinion that when efficient surgery is available, distention of the colon with wind or water is a method of treatment which should no longer be employed. If he were so situated that an abdominal section was impossible or unjustifiable, he would employ injection, but in no other circumstances would he do so. Roughton's contention is that if the cases are diagnosed early and treated by laparotomy without wasting precious time over injection or inflation, recovery would almost always follow.

Medical Press and Circular, London

July 12

29 Conical Cornea. S. Stephenson.
30 Chronic Headache: Neurologic Advances Regarding Its Diagnosis and Treatment. T. A. Williams.
31 Some Possible Dangers Connected with Use of Electricity in Every-Day Practice. F. Hernaman-Johnson.
32 Typhoid Fever. L. Drum.

July 19

33 *Asthma in Children. R. O. Moon.
34 Gout and Rheumatism in Relation to Chronic Arthritis. M. Ricklin.
35 Water-Supply and Enteric Fever. G. C. Jones.
36 Harrogate: Its Waters and Its Baths. J. Rutherford.

33. **Asthma in Children.**—For preventing the recurrent attacks of asthma there is no drug, in Moon's experience, so effective as arsenic. Beginning with liquor arsenicalis, m. ii, t.d.s., it may gradually be increased; but there is no object in pushing it to large doses. Moon has found it most satisfactory to give the arsenic alone, and if the attacks are recurring rather frequently to prescribe also at bedtime:

℞	Gm. or c.c.	
Potassii iodidi	2	gr. iii
Vini ipecacuanhæ	33	m. v
Syrupi tolutani	66	m. xx
Aquam ad 30		ad ℥ j

M. S.: To be taken at bedtime.

Moon says other remedies which may at times prove useful are lobelia in the form of the tincture, 10 minims every half hour, till the paroxysm is allayed, or the physiologic effects—nausea and a feeling of faintness—disappear. Similarly, belladonna may be given at frequent intervals till the paroxysm ceases or the physiologic effects are present. The liquid extract of grindelia, m. 10-15, every three hours, flavored with syrup of orange peel to conceal its unpleasant taste, will often cut short an attack of asthma. Moon cautions that we must always remember that most of the patent powders and medicines which claim to be cures for asthma are in the nature of depressants, and are therefore quite unsuited in most cases, for children. Apart from this, they only attempt to deal with the paroxysm, and therefore no effort is made to brace up and harden the nervous system, which in Moon's opinion, is the most important thing to do if we wish to treat asthma scientifically.

Australasian Medical Gazette, Sydney

June

37 *The Intestinal Flora and Its Work. C. Reissmann.
38 Pain in Right Side. E. T. Thring.
39 Nasal Administration of Nitrous Oxid, Coleman's Nasal Apparatus. W. R. Parker.
40 Administering of Anesthetics. M. C. Lidwill.
41 Three Cases of Hysteria. A. G. Salter.
42 Pathology and Symptoms of Movable Kidney. C. MacLaurin.
43 *Case of Congenital Heart-Block. J. M. Gill.
44 Operation for Epiphora Due to Eversion of the Lower Punctum. W. O. Maher.
45 Case of Tetanus Treated by Subdural Injection of Antitoxin. R. J. Milliard.

37. **Intestinal Flora.**—Reissmann states emphatically that the lactic acid treatment of intestinal putrefaction is not a panacea for all ills, but its value in cases of excessive intestinal putrefaction has been proved. Neither is its efficacy to be called in question, because a large number of so-called preparations of the lactic acid bacillus are marketed which on examination have been found not to contain the living bacillus. Also we should not attribute to the action of the lactic acid germ results which may have been produced by special dieting.

43. **Congenital Heart-Block.**—The patient, 3 years old, though small for her age, was fairly well nourished. She could stand, but not walk. She had a purplish-red color in her cheeks. The abdomen was full, and the liver uniformly enlarged, but not tender. The pulse was perfectly regular; the rate as counted for the full minute by the stethoscope was 50, the net count being 49. No pulsation visible in the veins in the neck; precordial pulsation not unduly noticeable. Percussion showed increased dulness upwards. The heart sounds were normal. The respiration rate was 50; but the heart rate and respiration rate though almost always coinciding, occasionally deviated a little. Now and then there would be a deep sighing inspiration, followed by a longer pause than usual, but during this pause the heart would continue to beat as before. Growth took place very slowly, her general condition showing a gradual improvement. She never had any epileptiform seizures. The pulse rate varied between 47 and 60, but was generally about 50 or a little more. About two years after Gill first saw the girl, he made a pulse tracing. There was no murmur or thrill. The heart was evidently hypertrophied as shown by the protrusion of the chest-walls. He could not be sure of any pulsation in the jugulars, and could get no record of any with the polygraph, but the neck was very short. Five months later she had a slight attack of tonsillitis, the temperature being 101, the pulse rate was 64, heart beat and respiration corresponding as before, except when she coughed; the interruption in the breathing caused thereby did not interfere with the heart-beat, which would continue at the same regular rate as usual. In the morning she seemed to be better, and was running about. Death took place quite suddenly in the afternoon. No post-mortem was allowed.

Australian Medical Journal, Melbourne

June

46 Suggestions Concerning Visceroptosis. R. R. Stawell.
47 Studies on Muscular Factor in Infantile Paralysis. W. Mackenzie.
48 Case of Tetanus Treated with Intraspinal Injections of Magnesium Sulphate. M. C. Gardner.
49 Embolism of Abdominal Aorta. H. A. S. Newton.

Annales de Médecine et Chirurgie Infantiles, Paris

June 15, XV, No. 12, pp. 369-396

50 Ultraviolet Rays Inadequate for Sterilization of Milk, Etc. Foveau de Courmelles.
51 Insufficiently Fed Infants. (Les nourrissons hypoalimentés; leurs vomissements, leur réalimentation.) J. Lemaire.

Archives des Maladies de l'App. Digestif, Paris

June, V, No. 6, pp. 289-348

52 *Secondary Cancer of the Umbilicus with Gastric Cancer. W. Oettinger and P. L. Marie.
53 Too Perfect Digestion as Cause of Constipation. (La "surdigestion" chez les constipés.) R. Goiffon.
54 *Tardy Gastric Pains from Spasm of the Pylorus in Winter with Chronic Gastric Ulcer. H. Boschi.

52. **Cancer of the Umbilicus Secondary to Cancer of the Stomach.**—The patient in the case reported was a woman of 34 who applied for relief for pains in the stomach first noted three months before in the midst of apparently perfect health. The pain appeared with symptoms of indigestion and was transiently relieved by vomiting, and she was losing constantly in weight. There was no pain before breakfast but it came on an hour and a half to three hours after meals and woke her at night. The umbilicus was found slightly protruding with a hard, stem-like tumor extending backward to a primary cancer at the pylorus. In the sixty-three cases of cancer of the umbilicus on record, forty-four of the patients were women. Oettinger and Marie emphasize the importance of examining the umbilicus to detect cancer in its incipient phase; there may be merely partial retraction of the umbilicus, the folds a little protruding, a minute lump palpable, not knobby and projecting, but hard, asymmetrical, drawing the umbilicus inward or there may be a small, hard border below the umbilicus. In a few cases the cancer early developed a fistula. Primary cancer requires, of course, prompt removal, but a secondary cancer at the umbilicus generally contraindicates operative treatment unless hemorrhages or pain compel it. If a palliative operation is done, such as the gastro-enterostomy in the case reported, it is advisable to resect the umbilical tumor at the same time for obvious reasons.

54. **Tardy Gastric Pain with Chronic Ulceration.**—Boschi has encountered five cases of chronic gastric ulcer in which during the winter there were recurring attacks of painful spasm of the pylorus. Kouchew has reported four similar cases of trouble only in the winter and Murri has called attention to the gastric disturbances during the winter which sometimes accompany chlorosis. The explanation seems to be that the action of the cold on the nerve terminals and vasomotor nerves causes contraction of the superficial vessels, expelling the blood and forcing it inward to the viscera, causing congestion in the abdominal vessels. The weakest of the viscera—the stomach with a chronic tendency to ulcer in his cases—feels the effect of the congestion most severely. The congestion in the stomach causes the old ulcer to flare up anew, with irritation of the local nerves and reflex pylorospasm. The kidneys are liable to suffer by the same mechanism in winter if a predisposition exists.

Lyon Médical, Lyons

June 18, CXVI, No. 25, pp. 1101-1140

55 *Advantages of Massage of the Eye in Treatment of Parenchymatous Keratitis. E. Grandclément.
56 Gastro-Intestinal Hemorrhages Simulating Gastric Cancer with Retention from Enlargement of the Prostate. Bouchut and Magdinier.

June 25, No. 26, pp. 1141-1200

57 Diastolic Hypotension and Hypertension. (Chute et pente diastoliques de la tension artérielle.) L. Gallavardin.

55. **Massage for Parenchymatous Keratitis.**—Grandclément has been advocating for nearly thirty years vigorous massage of the eye-ball applied for fifteen minutes ten or fifteen times a day, lubricating with a little salve so the eyelids can slide easier over the eye-ball. Done in this way he has been able to cure parenchymatous keratitis in seventy days unless there were pronounced Hutchinson teeth, in which cases the course required from ninety to a hundred days to accomplish the same results. If the leukocytes that have invaded the cornea in such quantities are left in peace, there is more or less blindness for months or years. But if with vigorous, constantly repeated massage the leukocytes are kept stirred up and mobilized, they are easily swept along by the circulating blood and the massage aids in developing the blood-vessels that flush out the leukocytes. During the entire course of treatment he keeps the pupil dilated with atropin to prevent any complications on the part of the iris, especially posterior synechia. The course may be completed or hastened by a few conjunctival injections of a 1 or 2 per cent. salt solution. He has never witnessed any benefit on the keratitis from iodid or mercury.

Berliner klinische Wochenschrift

July 10, XLVIII, No. 28, pp. 1265-1312

58 Breast Nursing During the Puerperium. (Stillen der Wöchnerinnen.) K. Franz.
59 Capacity for Breast Nursing. (Stillfähigkeit der Frau während der ersten Monate nach der Entbindung.) O. Heubner.
60 Volvulus of Cecum in Umbilical Hernia. M. Cohn.
61 Prophylactic Appendectomy? H. Wolff.
62 Spontaneous Rupture of Infected Spleen and Case of Perforating Abscess in the Spleen. (Zwei seltene milzchirurgische Fälle.) S. Johansson.
63 Value of Chlorophyl as Stain in Histologic and Other Research. (Ueber einen neuen Fettfarbstoff.) I. Boas.
64 Reinfection with Syphilis. (Reinfectio syphilitica oder Pseudoprimäraffekt?) C. Gutmann.
65 Syphilitic Anterior Poliomyelitis in Two Adults. A. Zadik.
66 Theory and Practice of Tuberculin Treatment of Tuberculosis. (Theoretische Grundlagen und praktische Ergebnisse der spezifischen Tuberkulosetherapie.) A. Wolff-Eisner.
67* Hour-Glass Stomach with and without Gastric Ulcer. (Ueber Ulcus penetrans ventriculi und Sanduhrmagen.) H. Strauss and S. Brandenstein.

67. **Hour-Glass Stomach With and Without Gastric Ulcer.**—Strauss and Brandenstein report three interesting cases to show the important information in regard to hour-glass stomach and other forms of spastic contraction in the digestive tract to be learned from examination with the Roentgen rays. In the first case a penetrating ulcer had entailed a slight perigastritis which had resulted in adhesions, drawing up the stomach and forming a loose fold projecting into the interior and producing the effect of an hour-glass stomach, although not actually obstructing the passage. The condition was suspected before the operation on account of the short distance to the right of the median line. They urge others to investigate this question as to the displacement to the left of a stomach with motor insufficiency in connection with symptoms of an ulcer as a sign of deforming perigastritis. In the second case the penetrating ulcer was found associated with a carcinoma opposite the protruding fold in the stomach. This case teaches that the Haudek symptom-complex—which was marked in this case—does not exclude cancer. In the third case the constriction in the stomach wall was occupied by a roll of muscle, the size of a pencil, which passed through the entire length of the groove, encircling the stomach, and there were no traces of carcinoma, ulcer or erosion; the trouble seemed to be merely a localized hypertrophy of the muscle tissue. There was no motor disturbance in this case, but the gastric secretion was deficient. The patient was a woman of 48 who had had gastric disturbances two years before and for nearly a year there had been spasms of pain in the stomach region, especially after eating, but sometimes fasting, with vomiting after meals and gradual loss of nearly 90 pounds in weight. The constricting cord of muscle could be palpated and it was resected with a strip of stomach wall. These cases suggest further that the discovery of the hour-glass stomach is just the beginning of the diagnosis.

Deutsche medizinische Wochenschrift, Berlin

July 13, XXXVII, No. 28, pp. 1297-1336

68 Tuberculin Free from Albumose in Treatment of Tuberculosis. (Behandlung der Tuberkulose mit dem Kochschen albumosefreien Tuberkulin.) G. Jochmann and B. Möllers.
69 Criteria of Anaphylactic Intoxication. A. Biedl and R. Kraus.
70 *Diagnostic Importance of Determination of Pepsin in the Urine in Stomach Disease. H. Scholz.
71 Scientific Bases for Training the Left Hand. (Wissenschaftlichen Grundlagen der sogenannten "Linkskultur." H. Liepmann. Commenced in No. 27.
72 Case of Pulmonary Tuberculosis Simulating a Heart Defect. H. Rotky.
73 Improved Technic for Making Iodized Catgut. (Vereinfachung der Herstellung des trockenen Jodkatguts.) K. F. Herhold.

70. **Diagnostic Importance of Pepsin in the Urine with Gastric Cancer.**—Scholz reported recently that no pepsin was found in the stomach content or urine in his cases of uncomplicated gastric achylia while with gastric cancer and achylia

there was no pepsin in the stomach content but more or less peptic ferment was found in the urine. His statements, based on sixty-six cases, have been challenged by certain others but he reiterates here that renewed research, which he describes, has confirmed the accuracy of his first statements. Consequently he reaffirms that in dubious cases of gastric cancer strong presumptive corroborative evidence is afforded by the discovery of pepsin in the urine when the gastric juice after a test breakfast, is free from pepsin and this finding is confirmed also after a bouillon breakfast.

Medizinische Klinik, Berlin

July 9, VII, No. 28, pp. 1070-1108

74 *Epidemic Poliomyelitis in Guinea-Pigs. (Nachtese aus der experimentellen Erforschung der Poliomyelitis acuta.) P. H. Römer.
75 Treatment of Gastric Ulcer. (Ulcus ventriculi.) M. Tollkuhn.
76 Exercise of the Eyes in Bloodless Treatment of Strabismus. (Die unblutige Schielbehandlung.) T. Schults-Zehden.
77 Study of Electric Injury. (Fall von Starkstromverletzung. Die Restitutionsreihe der körperlichen und geistigen Störungen.) E. Bischoff.
78 Roentgenoscope Research on the Heart. (Zur Röntgenuntersuchung des Herzens.) M. Levy-Dorn.
79 Action of Sulphur on the Skin. (Wirkung des Schwefels auf die Haut.) L. Golodetz.
80 Physiologic Catabolism of the Fatty Acids. (Neuere Versuche über den physiologischen Abbau der Fettsäuren.) E. Friedmann.

74. **Experimental Epidemic Poliomyelitis.**—Römer writes from the hygienic institute at Marburg of which von Behring is director to describe research on monkeys which has confirmed the fact that these animals are susceptible to acute poliomyelitis and that it is transmitted by the secretions of the nasopharynx and that a single attack confers immunity. He also states that he has succeeded in inducing a disease in guinea-pigs which strikingly resembles epidemic poliomyelitis in man, both in its clinical, etiologic, pathologic and histologic aspects. (The illustrated description of the affection in guinea-pigs has been published in the *Deutsche medizinische Wochenschrift*, 1911, xxxvii, 1209.)

Münchener medizinische Wochenschrift

July 11, LVIII, No. 28, pp. 1489-1544

81 Motor Functioning of the Colon. (Zur Physiologie und Pathologie der menschlichen Dickdarmbewegungen.) G. Schwarz.
82 Influence on Frog Blood-Vessels of Substances Released by Hemolysis. (Einfluss der bei der Hamolyse-freiwerdenden Substanzen auf überlebende Froschgefässe. (L. Hirschfeld and G. Modrakowski.
83 *Intravenous General Ether Anesthesia. R. Hagemann.
84 *Trypsin in Treatment of Surgical Tuberculosis. M. Brandes.
85 Ophthalmia Neonatorum Resembling Trachoma. (Ueber die dem Trachom des Erwachsenen analoge Bindehauterkrankung des Neugeborenen.) M. C. Wolfrum.
86 *Operative Treatment of Acute Ostitis of the Fibula. (Ueber subperiostale Diaphysenresektion bei Ostitis acuta purulenta fibulae.) M. Sulzer.
87 Intravenous Injection of Salvarsan in Syphilis without Reaction Phenomena. W. Wechselmann.
88 Digalen Poisoning. (Ueber Digalenvergiftung.) F. Heydner.
89 Improved Tests for Mental Capacity and Power of Observation. (Einfacher Auffassungsapparat für den klinischen Gebrauch.) W. Cimbal.
90 Apparatus for Continuous Supply of Fluid at Same Temperature. (Apparat zur Infusion von Flüssigkeiten unter konstanter Geschwindigkeit.) W. Straub.
91 Two Years of the Movement for Infant Welfare. (Zwei Jahre offene Säuglingsfürsorge in Nürnberg.) E. T. J. Zeitner.

83. **Intravenous Ether Anesthesia.**—Hagemann reviews the experiences at the Greifswald surgical clinic, in charge of König, with intravenous injection of ether in a total of eleven cases. The patients submitted to this technic were those requiring operations on the mouth or face or in extreme cachexia. By mixing the ether with cold water and gradually warming over the water bath to 38 C. (100.4 F.) and keeping the fluid at this temperature, all excess of ether evaporates and a 4.68 per cent. solution results. From 1,050 to 3,925 c.c. of the solution were thus infused; there was no sign of thrombosis or embolism and he thinks that the technic is so free from danger that it is justified for the operations in which it offers superior advantages, especially those on the face. The infusion of such large amounts of fluid is also of advantage in much debilitated patients; the pulse was never weaker but often stronger after the anesthesia and there was no thirst.

84. **Trypsin in Treament of Surgical Tuberculosis.**—Brandes reports from Kiel considerable experience in this line. The results were not sufficiently promising to render the clinic disloyal to the old tried and tested 10 per cent. iodoform-glycerin treatment. This really is an indirect ferment therapy as it attracts the leukocytes to the spot.

86. **Subperiosteal Resection of Shaft for Ostitis of the Fibula.**—Sulzer has been comparing the ultimate outcome in a number of cases of acute purulent ostitis of the fibula treated by various methods. Seven cases are reported in detail as typical of the various experiences. In the cases in which treatment by subperiosteal resection of the shaft, the lesion healed promptly and permanently, while with the more conservative measures the affection dragged on tediously or recurred again and again. This resection of the shaft does not interfere with normal growth or functioning, while the prompt removal of the focus removes all danger of sepsis.

Therapeutische Monatshefte, Berlin

July, XXV, No. 7, pp. 405-464

92 *Organotherapy. C. Hirsch.
93 *Calcium Salts in Treatment of Tetany of Pregnancy. E Meyer.
94 Clinical Availability of Predigested Albumin. (Ueber die klinische Verwertbarkeit von tief abgebautem Eiweiss.) F. Frank and A. Schittenhelm.
95 *The Wassermann Reaction as Guide in Treatment of Syphilis. J. Citron.
96 Fatal Lysol Poisoning. (Lysolvergiftung mit Aspiration in die Luftwege und konsekutivem Empyem. Karbolverätzung der Luftwege mit tödlichem Ausgang.) A. Cahn.

92. **Organotherapy.**—Hirsch reviews the history of this branch of medicine from the days of Hippocrates and Celsius to the latest catalogues of the manufacturing chemists. While doing full justice to the achievements in this line, he thinks that in some respects now organ preparations are being carried to extremes, suggesting the absurdities of medieval apothecaries. He concludes with the remark that an effectual remedy against quackery is to be found in regulation of advertising, saying that the advertising of untested or nonsensical remedies and methods of treatment should be prohibited.

93. **Lime Salts in Treatment of Pregnancy Tetany.**—Meyer's patient was a small woman with signs of old rachitis who had had severe tetany during each of her three pregnancies; in the last it persisted a week after delivery. Meyer ordered a milk diet, abstention from salt, and a tablespoonful three times a day of a 4 per cent. solution of calcium chlorid, $CaCl_2$, with vegetables and fruit rich in the lime salts. Improvement was evident at once and in three days the woman was transformed. Recurrence of trouble after return to ordinary diet was again cured by resumption of the lime treatment. In a fourth pregnancy the same measures had to be resumed again and the effect was equally successful. All the woman's children showed signs of severe rachitis. Meyer gave the calcium merely in the hope of reducing the excitability of the nervous system and the results surpassed all his anticipations, as also in another case of tetany in the course of a nephritis. Curschmann has also reported the successful treatment of tetany in two cases with calcium lactate. Meyer adds that the harmlessness of this method of treating tetany justifies a trial of it in all cases of pregnancy tetany regardless of whether the parathyroid bodies are responsible for the trouble or not.

95. **The Wassermann Reaction as Guide to Treatment in Syphilis.**—Citron regards the Wassermann test as supremely important for determining the necessity for treatment, permitting individualization in each case and thus filling a long felt want. The test must be made with the original technic and should be repeated at intervals. Every return of a positive reaction should be regarded as a sign of active syphilis. He has made a point of testing the wives and children of syphilitics free from symptoms except a positive reaction, and he has found that they give a positive reaction in a surprisingly large proportion of the apparently healthy. This asymptomatic syphilis in many cases runs into an aortic affection, aneurysm or aortic insufficiency, tabes or paralysis. He comments on the remarkably large proportion of patients whose primary manifestation escapes their attention, his

experience confirming Fournier's that fully 50 per cent. of the tertiary syphilitic have no knowledge of any primary sore. The aim of treatment should be to transform a positive into a negative Wassermann reaction; the later specific treatment is commenced, the harder it is to accomplish this. The Wassermann reaction permits an estimate of the therapeutic effect of drugs, and salvarsan, while putting an end to other manifestations of syphilis, does not always insure a negative reaction. Mercury should still be the main reliance, possibly associated with salvarsan.

Wiener klinische Wochenschrift, Vienna

July 13, XXIV, No. 28, pp. 1003-1042

97 *Serodiagnosis of Cancer. (Ueber neuere serologische Methoden zur Diagnose maligner Tumoren.) R. Kraus, E. v. Graff and E. Ranzi.
98 Splitting of Glucosids by the Brain. (Glykosidspaltung durch Gehirn.) L. Hess.
99 Experimental Tricuspid Insufficiency. S. Bondi and A. Müller.
100 *Salvarsan in Syphilis. V. Mucha. Commenced in No. 27.

97. **Serodiagnosis of Cancer.**—The extensive research here reported emphasizes the biologic interest of the newer serologic methods of diagnosis but does not indicate that they have much practical importance. The meiostagmin reaction, however, proved misleading in only two out of the twenty-six parallel tests. The Freund-Kaminer reaction, that is, the absence of the property of destroying cancer cells which is always observed with normal serum, is not peculiar to cancer cases, and the same may be said of the test by activation of cobra venom.

100. **By-Effects from Salvarsan in Syphilis.**—Mucha reports from the clinic for skin and venereal diseases at Vienna, in charge of Finger, forty-four cases of neurorecurrences in 500 syphilitics given salvarsan treatment. He describes them in detail, commenting that the disturbances involving the auditory nerve since salvarsan has been introduced far outnumber all the cases that have been recorded in international literature during the last twenty years. The fact that continuing the treatment sometimes cures the auditory disturbance sustains the assumption that the salvarsan injures the nerve in question, thus inducing a point of lesser resistance where the syphilis virus makes its influence felt more intensely. When the auditory disturbances subside spontaneously or persist rebellious to renewed treatment of the syphilis, the assumption seems plausible that the trouble was predominantly the result of the toxic action of the arsenic, and that after elimination of the drug the changes were so slight that complete restitution followed or so severe that this was no longer possible. An argument in favor of this view is the benefit obtained in two cases by sweats and injection of pilocarpin to promote elimination of the arsenic, without further specific treatment. There is still a further possibility, namely, that the salvarsan may have sensitized the syphilitic virus. In his experience there were eighteen cases of neurorecurrences in the ear in which the interval since infection was only six to twelve months. The neurorecurrences were observed with both subcutaneous, intramuscular and intravenous injection of the salvarsan. In conclusion Mucha reiterates that these so-called neurorecurrences are serious matters for the patient and frequently entail permanent injury, and the patients seldom care for further medication. Mucha's material includes besides the eighteen ear cases, six with general toxic phenomena, digestive disturbances, intense headache and dizziness, six with disturbances in other cerebral nerves, four with epileptiform attacks, two with cerebrospinal phenomena, five with optic neuritis, one with optic neuritis plus cerebral hemorrhage leaving motor and mental disturbance, one case of fatal meningo-encephalitis, three cases of non-syphilitic meningitis seemingly aggravated by the salvarsan, and a case of nephritis for which he thinks the salvarsan was evidently responsible, as distinct traces of arsenic were perceptible in the urine nine months after the intragluteal injection of salvarsan and the nephritis showed great improvement under sweating procedures. Twenty-four pages are devoted to the details of the forty-eight cases in which striking symptoms followed the salvarsan treatment out of the total 500 cases. Finger's previous comment on his experiences was summarized in these columns June 10, page 1765.

Zentralblatt für Chirurgie, Leipsic

July 15, XXXVIII, No. 28, pp. 953-984

101 *Tincture of Iodin in Treatment of Surgical Tuberculosis. F. Franke.
102 *Double Opening in Gastro-Enterostomy. (Die neue Ruggi'sche Methode der doppelten Verbindungsöffnung zwischen Jejunum und Magen bei der Gastroenterostomie.) G. Rocchi and U. Stoppato.
103 *Early Diagnosis of Suppuration in and Around the Kidney. (Zur Frühdiagnose der paranephritischen Eiterung und des Nierenabscesses.) E. W. Baum.

101. **Tincture of Iodin in Surgical Tuberculosis.**—Franke states that he has been using tincture of iodin systematically for the last ten years in sterilization of the field of operation for tuberculosis of the soft parts. He fills up the cavity with the concentrated tincture and then removes the excess with a syringe after a minute or two, or if the cavity is small merely tampons with gauze which sucks up the excess. He has never seen any untoward by-effects, except in one case in which a small bone sequester interfered with healing, but as he had used other disinfectants in this case the iodin need not be incriminated. Since adopting this technic he has scarcely ever had to amputate on account of surgical tuberculosis, even in the elderly, and the success of the measure is instructively shown in the case of a woman of 43 finally cured after a series of operations including resection of the right knee and ankle, curetting from the ankle to the hip for ascending tuberculosis of the soft parts of the outside of the leg, with resection of nine ribs and of the lower half of the sternum.

102. **Double Gastro-Enterostomy Opening.**—Rocchi and Stoppato give an illustration of the two openings on the same plane, or nearly at right angles, which Ruggi prefers for gastro-enterostomy, in prevention of the vicious circle. The space between is at least 2 cm.

103. **Early Diagnosis of Suppuration in and Around the Kidney.**—Baum states that bacteria are found in the urine in case of metastatic suppuration in and around the kidney much more regularly than is generally recognized. He obtained positive findings in all but one of seven cases of the kind, while the urine was constantly sterile when the suppuration was retroperitoneal. Staphylococci are generally responsible for the suppuration and their toxins injure the epithelium in the canaliculi, rendering the walls permeable for the germs even when there are no cellular elements in the urine.

Zentrablatt für Gynäkologie, Leipsic

July 15, XXXV, No. 28, pp. 1001-1040

104 Bacteriologic Examination in Febrile Abortions and Deliveries. L. Warnekros.
105 Formation of Vagina Out of Part of Rectum. (Scheidenbildung bei angeborenem Vaginaldefekt.) G. Schubert.
106 Traumatic Vaginal Prolapse of Small Intestine Ten Years After Vaginal Hysterectomy. P. Esau.

Zentrablatt für innere Medizin, Leipsic

July 15, XXXII, No. 28, pp. 689-712

107 *Arteriosclerotic Anomaly of Taste. (Geschmacksparästhesie auf arteriosklerotischer Grundlage.) A. Müller.

107. **Morbid Taste in the Mouth on Arteriosclerotic Basis.**—Müller's patient was a man of 52 who had had an intensely sweet taste constantly in the mouth for three weeks. Signs of pronounced arteriosclerosis were evident, but nothing was found to explain the taste anomaly except the arteriosclerosis. The nervous system seemed normal and no benefit was derived from bromids. Theobromin sodium salicylate (diuretin) was then prescribed and the effect was prompt and complete, the taste becoming normal the same day. On suspension of the drug the disturbance returned, but was again cured in the same way and the patient now takes this drug continuously and has been free from the trouble for a year. Similar benefit was realized in another case in which the patient complained of attacks of pain in the tongue, for which no cause except arteriosclerosis could be discovered.

Gazzetta degli Ospedali e delle Cliniche, Milan

May 21, XXXII, No. 61, pp. 643-658

108 *Gastro-Intestinal Functioning in Pellagra. L. Cecconi.

108. **The Digestive Functions in Pellagra.**—Cecconi describes the clinical and metabolic findings in a dozen patients with pellagra. A striking feature common to all was the total lack

of free hydrochloric acid in the stomach content, while the bile and pancreas functioning seemed to be normal, as was also digestion of fats.

Riforma Medica, Naples

July 3, XXVII, No. 27, pp. 729-756

109 Morphologic Changes in the Blood under Influence of Haloid Salts. A. Chistoni.
110 Chilling in Mechanism of Infections and Immunity. (Il raffreddamento nel meccanismo del processi d'infezione e d'immunita.) D. De Sandro.
111 Influence of Pellagra on Digestive Secretions. (Di alcune azioni fermentative nella pellagra.) L. Preti and L. Pollini.

Norsk Magazin for Lægevidenskaben, Christiania

July, LXXII, No. 7, pp. 753-856

112 *Treatment of Fracture of the Radius. J. Nicolaysen.
113 *Acute Leukemia. K. Thue.
114 *Lumbago. V. Bülow-Hansen.
115 *Tearing Out of Tendon from Patella. (Dobbeltsidig avrivning av quadricepssenen fra patella.) E. Andersen.
116 *Nail Extension in Treatment of Fracture. (Avendelse av nagleextension.) R. Ingebrigtsen.
117 Iridotasis. (Dr. Johan Borthen's "forbedring.") S. Holth.

112. **Fracture of the Radius.**—Nicolaysen discusses the lessons learned from thirty-five cases of fracture of the radius and five of dislocation without actual fracture, emphasizing various points by the aid of twenty-eight radiographs. The outcome, he reiterates, depends on correct reposition of the fragments and on the age of the patients. The result was ideal in all his patients under the age of 50 while it was satisfactory in only three of the ten over this age. The outcome was especially poor in an elderly patient with deforming arthritis.

113. **Acute Leukemia.**—Thue reports three cases with necropsy and compares the findings with the various prevailing theories in regard to acute leukemia and with some similar cases on record. His patients were three boys, 1, 5 and 16 years old. The bacteriologic findings were constantly negative.

114. **Lumbago.**—Hansen warns that persons with a tendency to lumbago should refrain from cold baths and fatiguing exercises. He has encountered cases in which the lumbago developed in connection with a series of gymnasium exercises. The chief characteristic of lumbago, he remarks, is the tendency to recurrence. In some cases the trouble is an unsuspected fracture of the transverse process of some vertebra. In other cases he has been able to discover a tender point in the psoas iliacus muscle on one side, palpating down from the attachment of the muscle on the trochanter. When this is the case, attempts to flex the thigh against resistance are painful. The old lumbago is thus revealed as having its seat not in the back but in the front. This discovery threw retrospective light on a number of puzzling cases in his practice. As with sciatica, the spine frequently shows curvature from the affected side, the affected muscle being relaxed as with rheumatic torticollis. In some cases of lumbago there is accompanying neuralgia in the pelvis, especially in the sciatic nerve, and this should be regarded in treatment. He advises examination during a free interval, seeking for the almost inevitable tender point, and until treatment succeeds in restoring normal sensibility here, there is little prospect of a permanent cure. Rest and warmth are the main factors, and he has the patient apply a hot water bottle to the seat of the sensitive point on retiring, taking internally at the same time 0.5 or 1 gm. acetylsalicylic acid. In very severe cases the patient should stay in bed. An orthopedic corset may be found useful and this or a plaster cast is absolutely necessary in traumatic lumbago; it may save the patient much trouble and discomfort later. Massage of the tender points is a further aid in treatment, but it should be done by skilled hands on a systematic plan, and repeated at intervals during two or three months. It should be commenced very gently, as, done carelessly, it may do more harm than good. The massage is most effectual with the patient reclining or partially reclining, with flexed knees.

115. **Tearing Away of the Tendon from the Patella.**—Andersen has had three cases of this kind in his practice during the last few years, the tendon of the quadriceps being torn smoothly from the patella. The rupture occurred during a backward fall, the muscle pulling the tendon out from its attachment to the patella. Three of the patients were over 70 and he did not venture to open the joint and suture the tendon in all of them, but it proved successful in the cases in which it was done. In each of the cases the patients had suffered the same accident a few years before on the other knee. Two of the patients said they had no pain at the time of the rupture. The outcome is seldom good without suture of the tendon, whether a plaster cast and massage are applied or not.

116. **Nail Extension for Fracture.**—Ingebrigtsen reports excellent results from application of extension in a compound fracture of the leg with the stumps lapping so that the leg was shortened by 1½ inches. A 15-pound weight was suspended from a Becker nail driven through the bones just above the malleoli, and the leg gradually assumed its normal length in three days while there was no pain after the extension was applied.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

OBSTETRICS. Edited by Joseph B. De Lee, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School, with the Collaboration of Herbert M. Stowe, M.D. Volume V, Practical Medicine Series. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School, and Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Series 1911. Cloth. Price, $1.25. Pp. 233, with illustrations. Chicago: The Year-Book Publishers.

THE ETIOLOGY OF BERIBERI. By Henry Fraser, M.D. (Aber.), Director, Institute for Medical Research, and A. T. Stanton, M.D. (Tor.), Bacteriologist, Institute for Medical Research. No. 12. Studies from the Institute for Medical Research, Federated Malay States. Paper. Price, 7 shillings. Pp. 84, with illustrations. Singapore: Kelly & Walsh, 1911.

MANUAL OF PSYCHIATRY. By J. Rogues de Fursac, M.D., Formerly Chief of Clinic at the Medical Faculty of Paris. Translated and Edited by A. J. Rosanoff, M.D., Second Assistant Physician, Kings Park State Hospital, N. Y. Third Edition. Cloth. Price, $2.50 net. Pp. 484. New York: John Wiley & Sons, 1911.

MEDIZINAL-BERICHTE ÜBER DIE DEUTSCHEN SCHUTZGEBIETE. Deutsch-Ostafrika, Kamerun, Togo, Deutsch-Südwestafrika, -Neu-Guinea, Karolinen, Marshall-Inseln, Marianen und Samoa für das Jahr 1909-10. Herausgegeben Von Reichs-Kolonialamt. Paper. Pp. 649. Berlin: Ernst Siegfried Mittler und Sohn, 1911.

TWENTY-SEVENTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF THE STATE OF RHODE ISLAND, for the Year Ending Dec. 31, 1904. And Including the Report on the Registration of Births, Marriages and Deaths in 1903. Cloth. Pp. 304. Gardner T. Swarts, Secretary.

ONE HUNDRED SURGICAL PROBLEMS. The Experiences of Daily Practice Dissected and Explained. By James G. Mumford, M.D., Visiting Surgeon to the Massachusetts General Hospital. Cloth. Price, $3. Pp. 354. Boston: W. M. Leonard, 1911.

TRANSACTIONS OF THE FORTY-FIRST ANNUAL SESSION OF THE MEDICAL SOCIETY OF VIRGINIA, Held in Norfolk, Va., Oct. 25-28, 1910. Paper. Pp. 632. Dr. Paulus A. Irving, Secretary, Farmville.

New Patents

Recent Patents of Interests to Physicians

984,879. Invalid bed frame. Joseph A. Bartholome, Baltimore.
984,539. Obtaining soluble and coagulatable proteid composition. Henri L. J. Chavassieu, Lyons, France.
984,756. Surgical forces. Paul Frisch, Berlin, Germany.
984,822. Evaporating solutions. Samuel M. Lillie, Philadelphia.
984,619. Surgical atomizer. Andrew Truesdale and W. S. Virgin, Washington, D. C.
984,722. Composition yielding ozone. Alexander H. Twombly, Summit, N. J.
985,500. Atomizer. Georges Baujard, Paris, France.
985,505. Spray nozzle. Lewis A. Brinkman, Chicago.
985,350. Disinfecting device. James Kneen, Oakland, Cal.
985,354. Poison bottle cork. Robert A. Leet, Oakland, Cal.
985,547. Electromagnetic massage device. Edmund H. Pryce, New York.
985,303. Medicinal powder roller. John Toskov, Little Neck, N. Y.
985,559. Preparing bismuth betanaphtholate. Joseph L. Turner, Philadelphia.
985,306. Cot attachment for invalid beds. John C. Van Slyke, Fort Collins, Colo.
985,307. Attachment for invalid beds. John C. Van Slyke, Fort Collins, Colo.
986,263. Aspirating syringe. Cheves Bevill, Waldron, Ark.
986,618. Medical apparatus. Edmund A. Babler, St. Louis.
986,999. Crutch. Charles E. Kritsch, Washington, D. C.
986,738. Breast evacuator. Hattie F. Milligan, Cambridge, Mass.
986,650. Means for supporting stretchers in ambulances. Jesse T. Sheets, Covington, Ky.